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THE MAGAZINE OF THE MUSEUM OF AMERICAN FINANCE



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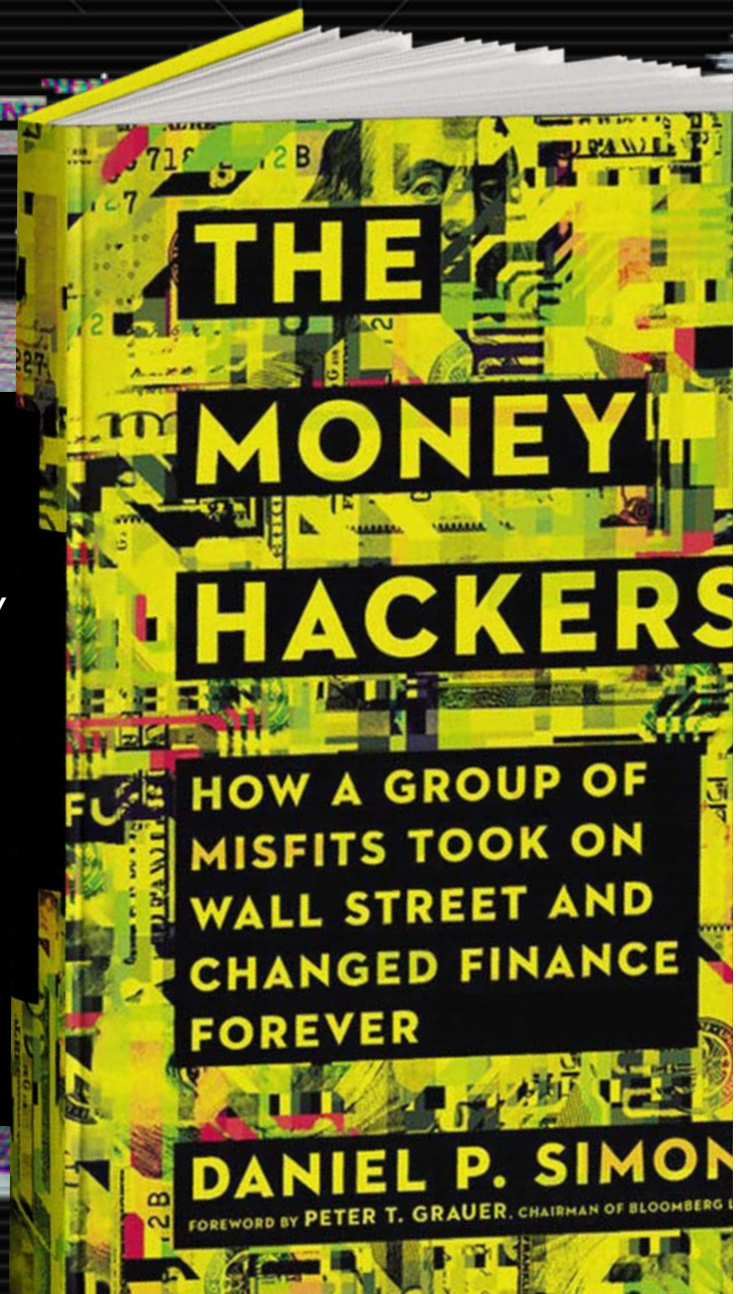
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Museum Programs Move Online During COVID-19 Shutdown

MUCH HAS CHANGED in New York City and throughout the world since my last column in our Winter edition. As our city essentially shut down in early March, our Museum—like so many other institutions—has needed to adapt its programming to continue to serve our audiences in new and innovative ways.



Message to Members

David J. Cowen | President and CEO

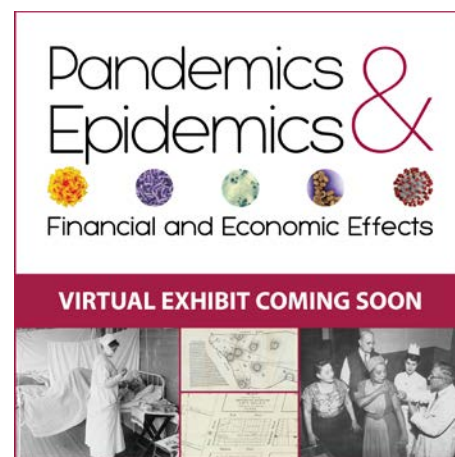
On March 5, just before the city-wide shutdown, we opened “Ebb & Flow: Tapping into the History of New York City’s Water,” an exhibit produced in partnership with the NYC Municipal Archives that explores the history of bringing clean water to New York City while highlighting the story of the Manhattan Company (predecessor of today’s JPMorgan Chase). The exhibit opening included a live recording of *Person Place Thing* with Emmy Award winner Randy Cohen, featuring an interview with the commissioner of the NYC Department of Environmental Protection, Vincent Sapienza. It is now available as a podcast at www.PersonPlaceThing.org. While that exhibit is currently not open to the public, the section about Aaron Burr and the Manhattan Company, titled “Dirty Water,” is featured on page 15 of this issue of our magazine.

In response to the COVID-19 crisis, MoAF Chairman Dick Sylla, along with *Financial History* editorial board members Bob Wright and Janice Traflet, wrote the cover story of this issue exploring the financial and economic impacts that previous pandemics have had on the United States. Our exhibit team adapted this article, “Pandemics & Epidemics: Financial and Economic Effects,” into an online mini-exhibit that can soon be found at www.moaf.org/pandemics.

We are working closely with our partners at the Fordham University Gabelli Center for Global Security Analysis to reschedule our Spring programs as online/virtual events. Our first virtual partnership event was a full-day conference on Social Innovation held on April 21. We expect to hold weekly webinars with Fordham from late May through August. Stay tuned to our website and social media for event updates as additional programs are confirmed.

As of April, the American Institute for Economic Research (AIER) has almost fully catalogued our library collection, which is on loan to them. It can now be searched online at www.aier.org/archives. The call numbers for books in our collection begin with “MoAF.”

On May 8, we launched a new video series exploring our collections and exhibits, which is available on our YouTube channel (www.youtube.com/Finance



Museum) and across our social media platforms (@FinanceMuseum). I am currently narrating these short video programs from home, and the first several videos take a closer look at objects in our “Out of the Vault” traveling exhibit.

And, finally, on May 4, registration opened for our first virtual Museum Finance Academy (MFA) for high school juniors and seniors. Weekly classes begin on May 14 and are offered via Zoom. See page 5 for more details.

During this difficult time, we are continuing to adjust and adapt to serve our members, students and constituents with quality programming. Stay safe and well, and we look forward to seeing you online until we can once again see you in person. \$

Museum Finance Academy Goes Virtual



ON MAY 4, registration opened for the first virtual session of the Museum Finance Academy (MFA). The MFA is the Museum's personal finance course and its most popular education program. Due to the closing of New York City schools during the COVID-19 pandemic, the Spring session of the MFA was moved to a live Zoom platform, with pre-registration required and all sessions taught remotely.

Weekly MFA classes for high school juniors and seniors begin on May 14 and run through June 4. Students who successfully participate in all sessions of the program will receive a certificate of completion, which they can then include on their college applications. This pilot program for the "Virtual MFA" is offered in partnership with Trinity Church Wall Street, which serves children, teens and adults in underserved populations, primarily in Lower Manhattan. \$

"Out of the Vault" Video Series Offers Virtual Tour of Museum Collection

ON MAY 8, the Museum posted the first video in its new "Out of the Vault" video series, which is now available on its YouTube channel (www.youtube.com/FinanceMuseum) and across its social media platforms. These short videos explore objects and documents from the Museum's collection that were featured in the "Out of the Vault" exhibit. David Cowen, the Museum's president and CEO, narrates the series from his home during the COVID-19 lockdown.

The "Out of the Vault" exhibit showcased some of the most unique, interesting and historical artifacts in the Museum's collection. Featured objects include some

of the nation's founding financial documents, such as Alexander Hamilton's Report on the Public Credit—considered to be the economic equivalent of the US Constitution—as well as the 1792 George Washington bond, which was signed by President Washington and is believed to bear the first use of the dollar sign on a US federal document. Many artifacts were signed by American political and business leaders from the 18th century through today, while others highlight technological innovations that transformed the financial services industry. Together, these objects represent more than 225 years of American financial history and achievement. \$



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Wild West Finance: The Johnson County Range War (Part 1)

By Brian Grinder and Dan Cooper

THE OPEN RANGE of the American West offered opportunities to thousands of individuals rich and poor. Cattle offered a risk-free way to earn untold riches, if the uncle of World War I flying ace Manfred Baron von Richthofen (the Red Baron) was to be believed. Uncle Walter never engaged in cattle ranching himself, but he was not alone in his high praise for raising cattle on the open range. Ian McDonald, a highly respected journalist for the Edinburgh newspaper *The Scotsman*, toured the American West in 1877¹ and reported back to his fellow Scots:

That stock-raising in Texas has been, and is, a profitable line of business there can be no doubt. Almost everyone who has entered into it with even a fair amount of care and earnestness, and had any knowledge of the work, has made money; while a great many have raised themselves from the humble position of a herd-boy to the possession of great wealth. A gentleman who had been engaged in the stock-trade for many years in the south of Texas assured me that, though he had seen a few reckless Americans go to the wall at cattle-raising, he had never known a Scotchman or an Irishman to fail; "they all make money." The same gentleman gave it as his opinion that, at the present day, capital invested in cattle-raising in Texas was paying more than 25% per annum.

Many others promoted cattle raising in much the same way. Johnson County Range War chronicler Helen Huntington Smith believed that, "None of the authors was a soulless promoter out to fleece the unwary; none was even trying to float a cattle company. They were simply honest boosters carried away by the euphoria of the great West."

Scottish² and English investors, along with East Coast capitalists, soon flooded the West with cattle companies. The Prairie Cattle Company, the Swan Land and

"There is not the slightest element of uncertainty in cattle-raising... Since it was very well known that the cattle business is very safe, and that the larger the capital therein the greater the ratio of profit, as expenses do not increase at the same rate with the capital, the cattle-raiser has found no difficulty borrowing an amount of money equal to his investment; and, though he might pay from 10 to 15% per annum for the use of it, yet he might expect to realize there from 25 to 35%."

— Walter Baron von Richthofen, 1885

Cattle Company, and the Frontier Land and Cattle Company, among others, were soon operating in Wyoming Territory. Moreton Frewen, Winston Churchill's uncle by marriage, became the first big-time rancher to run cattle in Johnson County, Wyoming, when he bought the 76 Ranch on Powder River in 1879. Frewen built a large log cabin on his ranch, which was dubbed "Frewen's Castle" by the locals. According to Frewen, he could easily entertain 20 people at his Wyoming lodge. A veritable who's who of British nobility found its way to the "Castle."

Frewen's Powder River Cattle Company, Ltd. was backed by enthusiastic English investors. Smith writes, "In 1882 Frewen, then 29, went to London and with a flick of a wrist raised a million and a half dollars to extend his holdings on Powder River." Unbeknown to Frewen, cattle prices would peak in 1882 and never recover.

John Clay, manager of the Swan Land and Cattle Company and president of the Wyoming Stock Growers Association (WSGA) during the Range War, wrote, "The years 1882, 1883 and 1884 were remarkably successful ones in the western cattle business. The climatic conditions were excellent, prices were good and every condition was favorable for a company to make a good showing." He also noted that the dividend his company paid in 1883 of 20.5% "...made a great sensation and carried a lot of people off their feet." They would soon come crashing down to Earth when Wyoming showed its harsh side.

The WSGA would play an integral part in the Range War. Organized by the large cattle ranchers in southeastern Wyoming, the WSGA handled the spring and fall roundups when cattle were brought in from the open range. The Association also employed range detectives, such as Frank Canton in Johnson County, who were responsible for apprehending cattle rustlers.

In the spring, calves were branded and the ownership of mavericks determined. A maverick was an unbranded calf that had been born and weaned out on the open range and was no longer with its mother. The unwritten law of the range was that the first person to locate a maverick and brand it became the owner of said calf. This wasn't a problem in good times even if rustlers took advantage of the system, but when times were tough, the WSGA, which only represented the large ranchers, used its political influence to pass legislation giving the WSGA sole authority to deal with Wyoming mavericks.

During the spring roundup, all mavericks were branded with an "M" and sold at auction to the highest bidder. According to historian Bill O'Neal, only WSGA members "with at least \$500 on deposit in a Wyoming bank" could bid. This left small ranchers out in the cold. Under this law, they were unable to recover their own mavericks even if they could prove ownership.

During the roundups, cowboys who worked for WSGA ranches were indiscriminating when it came to mavericks. Although mavericks were free to wander,



Montana artist Charlie Russell's painting, "Waiting for a Chinook," depicts the disastrous winter of 1886–87.

they often stayed nearby their owner's homestead, and good homesteaders kept a close eye on their unbranded property. Nevertheless, these open range assets were routinely rounded up, branded and sold at the WSGA auction.

Tensions began to mount as small ranchers chafed at the brazen actions of the WSGA. The WSGA, on the other hand, failed to distinguish between rustlers and honest homesteaders. In the WSGA's eyes, a homesteader was a rustler.

The large cattle ranchers in Johnson County had yet to experience a drought. That changed in the summer of 1886 when the spring rains failed to materialize. To make matters worse, overgrazing was becoming an issue. The once seemingly inexhaustible grasslands began to show strain as more and more cattle were released on the open range.

Ranch managers and the cowboys who worked for them hoped the summer drought would be relieved by a mild winter, but it was not to be. Those who experienced it remembered that winter as "The Great Die-up." Heavy snows began in November with a slight lull in early December. The snows returned with a vengeance in late December and did not abate until March. Cattle losses were horrendous. According to historian John Davis, "probably 50% of the range

cattle in Wyoming and 75% in Montana" were lost. Large outfits with absentee owners were hit hardest.³ Clay wrote, "The cowmen of the West and Northwest were flat broke. Many of them never recovered. They had not the heart to face another debacle... Most of the eastern men and the Britishers said 'enough' and went away." Moreton Frewen never returned to Wyoming after 1886.

Plummeting cattle prices and the continuing drought after a catastrophic winter spelled disaster for the cattle industry. Wages had already been cut by \$5 a month in the spring of 1886.⁴ Most cowboys working for the large outfits were seasonal employees who were laid off during the winter. Traditionally, an unemployed cowboy could "ride the grub line," which meant free room and board at the various ranches that would likely hire them back in the spring. This practice ended when the wage cuts went into effect, forcing many out-of-work ranch hands to resort to rustling to make it through the winter.

Since few ranch jobs were available in the spring of 1887, many former ranch employees turned to the Homestead Act of 1862 for relief. Under the Act, any male citizen over the age of 21 could, for a small processing fee, claim 160 acres of federally owned land. If the claimant improved the land and lived on it for five years, he

received title to the property.⁵

Of course, these cowboys knew the country well, and they tended to homestead in areas on the open range that were key to the success of their former employers. Large cattle ranchers, who depended on access to free federally owned lands and often acted as if they owned the open range, were incensed at the audacity of Johnson County homesteaders. They retaliated by refusing to hire any cowboy who owned his own cattle.

The WSGA aggressively pursued perceived rustlers, but they were unable to get convictions in local courts because the local jury pools were usually sympathetic to the rustlers. Frustrations mounted on both sides, and it was only a matter of time before blood was spilled.

The first deaths occurred in the summer of 1889 in central Wyoming when WSGA members wrongly hanged homesteaders Ella Watson and Jim Averell for cattle rustling. Adding insult to injury, the WSGA, through the Cheyenne media, mounted a national slander campaign against the two unfortunate victims. The violence would move to Johnson County in 1891 when two honest men were dry gulched. \$

Brian Grinder is a professor at Eastern Washington University and a member of Financial History's editorial board. Dr. Dan Cooper is the president of Active Learning Technologies.

Notes

1. According to Knowlton, "Over the next four months Macdonald would talk to anyone who knew anything about the emerging American cattle trade—ranchers, farmers, beef packers, and regulators. He traveled 11,420 miles by train—averaging 22 miles per hour, at a cost of 3½ cents a mile, visiting most of the states in the West and the Midwest."
2. John Clay wrote of Edinburgh:
The financial officers of that conservative old city had found a new mine to exploit. The drawing rooms buzzed with the stories of this last of bonanzas; staid old gentlemen who scarcely knew the difference betwixt a steer and a heifer discussed it over their port and nuts. Mr.

Underwood, a banker in Kansas City, the promoter, was a little tin god and Mr. J. Duncan Smith was his prophet. Mr. Smith was a fine type of an Edinburgh lawyer, successful in an investment company that has stood the test of time. But like the rest of us, he swallowed the cattle financial camel, not even worrying at the tail.

Christopher Knowlton, expanding on Clay's comments, wrote:

The Scots well understood what we today call "first-mover advantage." Historically, they had punched above their weight—that is to say, above the English—by being more willing to take risks and to do so earlier when an opportunity arose. They had also shown a knack for financial innovation, creating, just a few years before, the first "terminable debentures," or short-term bonds, designed with a duration of only a few years. Before this innovation, all available bonds fell into the category of highly conservative long-term securities, like our thirty-year mortgage. This innova-

tion alone drew £25 million of English capital into Scottish financial institutions by the 1880s, worth £2.2 billion in today's money.

3. Moreton Frewen, for instance, never wintered in Wyoming. He was usually only there for the fall roundup.
4. Prior to the wage cut, a typical cowboy made \$35 to \$45 a month working for the big outfits.
5. According to homesteading historians Richard Edwards, Jacob K. Friefeld and Rebecca S. Wingo, homesteading was also open to "war veterans of any age, widows and single women, married women who were heads of households, and even new immigrants if they simply affirmed their intention to become citizens."

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Will Coronavirus and Economic Nationalism Reverse Two Centuries of Globalization?

By Simon Constable

IS GLOBALIZATION DEAD? Anyone reading newspaper headlines through 2019 would have thought so as the United States and China played tit-for-tat in a trade war. But when looked at in a broader historical context, global trade and the interconnectedness of the world economy remains near its peak seen in 2008. That said, cracks are beginning to occur in the world order that look eerily similar to those seen just before the last major breakdown in world trade over a century ago. Those parallels don't mean that global trade is on a death watch. So far, it isn't, but there are signs about which leaders should worry.

At the time of writing, two things stand out as symbolic of the extent of globalization. The first is the recent outbreak of the COVID-19 coronavirus pandemic. While it started in Wuhan, China—a place few knew of a year ago—just weeks later, much of the world was stricken with the disease. Even the wealthiest countries struggled to cope. A big part of the reason the virus spread so quickly is that Wuhan, home to 11 million people, is an important production center in the global manufacturing supply chain. Ten

percent of all cars and light trucks made in China are produced in that location, which requires a slew of raw materials. The materials used to make the automobiles are sourced from all over the world, and then the finished products are sent back around the globe. In short, it was the massive global interconnectedness of trade that spread a dangerous disease.

Economists already knew about the interconnectedness. They have observed that when one country's manufacturing sector falters, then it won't be long before others do too. An incident that shuts or closes a significant factory in Ohio, which is part of America's industrial heartland, will likely be quickly followed by a slowdown in Germany or Mexico. It has to be that way because in this globalized world, the supply chains are all connected. We can see evidence of this by watching the ebb and flow of regional PMIs (purchasing managers indexes) that track the strength or weakness of the factory sector. These manufacturing PMIs tend to move in synch.

Another familiar symbol of globalization that relies on long supply chains is jeans. While these items were once closely associated with American freedom and prosperity, they have now become ubiquitous. Few people in the developed world have never worn a pair of jeans. It's not just their ubiquity that makes jeans a symbol of globalization; it is how they get manufactured that illustrates the matter. Before your jeans get to a retailer, the materials needed to make

them must travel thousands of miles. The journey starts with the need to grow cotton, which then gets spun into yarn and woven into cloth. After that, it gets cut, sewed and finished before being distributed through wholesalers to stores and then to consumers.

Levi Strauss & Co., makers of perhaps the most famous jeans in the world, make their production flow public. That gives us great insight into the company's far-reaching supply chain, which takes place over multiple continents. Cotton is grown in the United States, Mexico, Brazil, China, Greece and Pakistan. Then the fiber gets spun and dyed in Mexico, China and Pakistan. After that, the fabric cutting, sewing and finishing happen in Mexico, Haiti, Egypt, Poland, Turkey, Bangladesh and Pakistan. The jeans get sent to distribution centers in France, the United Kingdom, the United States, China, Japan and Spain. Finally, they get sent to stores where you may or may not buy them.

Not every pair of jeans will hit every country during its production. Nevertheless, they still travel a long way. Other brands of jeans almost certainly follow a similar route. Even if a brand of jeans gets stitched together in the United Kingdom or other northern European countries, then it is a fair assumption that the cotton wasn't grown there. Cotton is grown in hot climates. In other words, even locally produced jeans are a symbol of globalization.

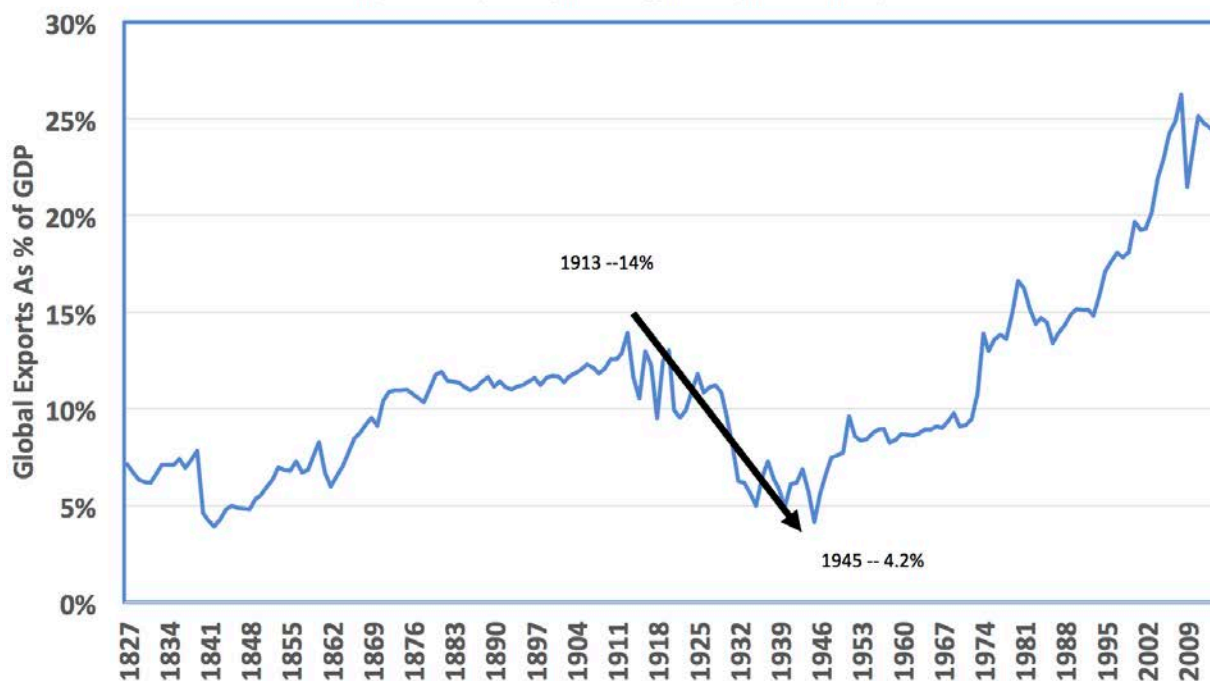
These long-winding supply chains may change over time, with the latest catalyst

Portrait of the British economist David Ricardo. Lent to the National portrait gallery by Christopher Ricardo, 2007. This painting shows Ricardo, aged 49 in 1821, just two years before his relatively early death.

1945 ---
4.2%

Global Exports as % of GDP

Source: Michel Fouquin & Jules Hugot, 2016. "Two Centuries of Bilateral Trade and Gravity Data: 1827-2014," CEPII Working Paper 2016- 14, May 2016, CEPII, using IMF data
http://www.cepii.fr/cepii/en/bdd_modele/presentation.asp



being a move to more efficient, greener and environmentally friendly production. That means that the exact supply chains may change, but they will almost certainly involve multiple countries on different continents.

Part of the need for long supply chains comes down to specialization, something that the founder of economics, Adam Smith, discussed over 200 years ago. He described the manufacturing process of a pair of shears, which are needed to clip a fleece from a sheep, and the specialists required.

The miner, the builder of the furnace for smelting the ore, the feller of the timber, the burner of the charcoal to be made use of in the smelting-house, the brick-maker, the brick-layer, the workmen who attend the furnace, the mill-wright, the forger, the smith, must all of them join their different arts in order to produce them.

Put simply, Smith showed that specialization works well in production because each expert can work more efficiently by concentrating on a single task.

It was another man who supercharged specialization and, with it, globalization. Self-taught 19th-century Scottish economist David Ricardo discovered a phenomenon known as comparative advantage. It showed that there's a benefit to trade even when a specialist can do everything better than can others.

For example, even if the United States can manufacture every item better and cheaper than all other countries, there is still an advantage for everyone to trade. He also showed that comparative advantage would lead to an increase in total output. That theory supercharged international trade over the last two centuries.

We know this by looking at global exports as a percentage of GDP. Because all exports must go somewhere, the total

of all exports from every country must be equal to the total volume of imports. In short, we are safe in looking solely at the export side of the equation, at least in this case. Net exports as a percentage of world GDP grew more than three-fold from 7% in 1827 to 24% in 2014, or almost a quarter of world GDP, according to the recent data. That means trade more than tripled as a portion of economic output. For reference, peak trade hit 26% in 2008.

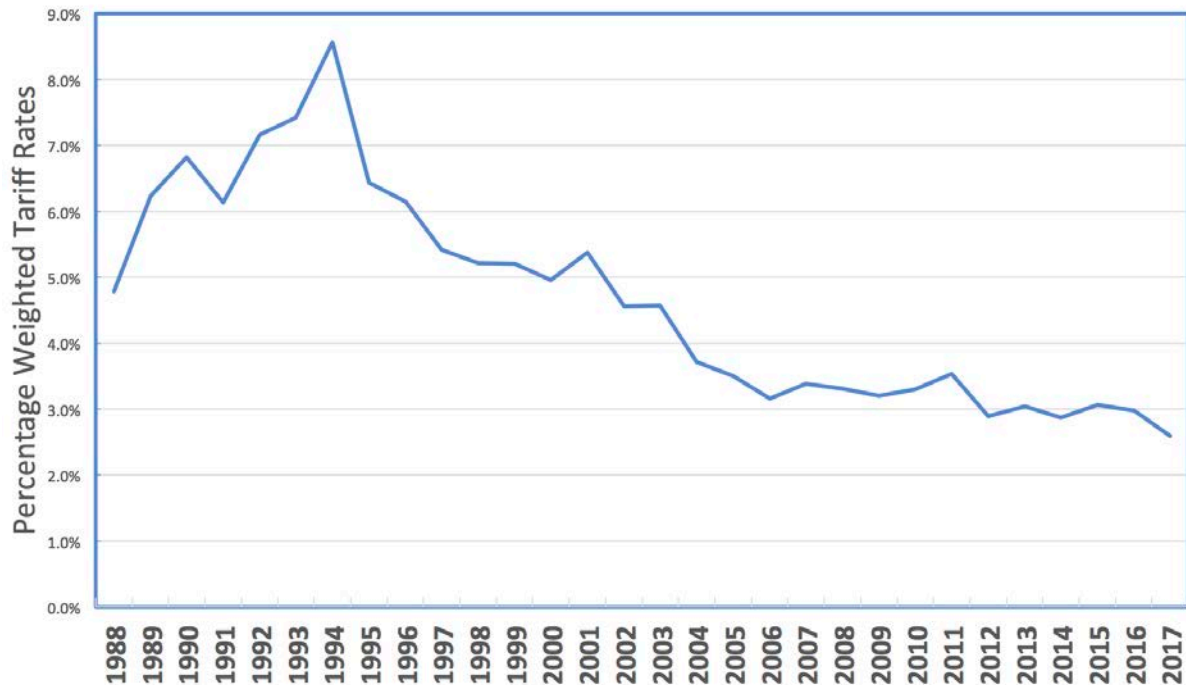
There was one period when trade did decline for a few decades and that also coincided with a period of military conflict and severe economic downturn in some leading economies. On the eve of World War I in 1913, combined global exports reached the then peak of 14% of global GDP. Then the world went to war, an event that would naturally stymie trade. But even after WWI ended, trade kept declining through the 1920s and 1930s.

The 1930s, in particular, suffered the

World Tariffs Rates

Applied, Weighted Mean, All Products (%)

Source: World Bank, Jan. 2020, Prepared by Steve Hanke, Johns Hopkins University



Great Depression, a period most scholars say was prompted by the introduction of tariffs (import taxes) by the United States in 1930 under the terms of the Smoot Hawley Act. Those tariffs further restricted global trade and America, and much of the world, suffered. When the world returned to war in 1939, the declines in trade continued. By the time WWII ended in 1945, trade as a percentage of GDP was a paltry 4.2%, or less than a third of its pre-WWI peak.

After WWII, and with America taking the lead in the new international system dominated by the US dollar, trade once again started. Until recently, that growth showed little sign of stopping. The exceptions are the widespread economic shut-downs caused by government reaction to the COVID-19 virus, and the trade war between the United States and China, the world's two largest economies. A big part of the phenomenal trade growth over the last three decades has been the concerted

effort by world leaders to reduce levels of tariffs and increase trade.

The leading body in this push is the World Trade Organization (WTO), which took over from the General Agreement on Tariffs and Trade (GATT). Founded in 1995, the WTO's efforts have born tremendous fruit in terms of reducing tariff levels. In 1994, the weighted average tariff rate was 8.6%, which fell to 2.6% in 2017. More recent numbers have likely increased due to the friction between the United States and China. Nevertheless, a reduction of almost seven-tenths in overall tariff levels is impressive. It is partly responsible for the continued rise in trade.

The correlation between lower tariffs and increased trade also works vice-versa and makes the recent US-China trade dispute worrying. Rising tariffs are never good for international trade, and few credible economists think differently. In February, right about the time the COVID-19 crisis was causing mayhem in Wuhan,

China decided to cut the tariffs on some US goods. Whether these two things are related isn't clear. It is also still unclear whether there will be a resolution to the US-China trade conflict when the pandemic ends. Economists will no doubt monitor whether tariff levels fall or rise when the pandemic ends.

There's another concern over the future of trade: Non-tariff barriers. The United Nations wrote a report focused on the matter in Asia last year, stating the following:

Fueled by legitimate public policy concerns, as well as ongoing trade tensions, **the number of non-tariff measures (NTMs) has risen significantly.** While NTMs often serve important public policy objectives linked to sustainable development, **the trade costs associated with NTMs are estimated to be more than double that of tariffs.** (Author's emphasis)

Non-tariff barriers are like tariffs in disguise. They are regulations and rules that politicians put in place that make it harder for other countries to sell their goods. Generally, they go largely unnoticed, but that doesn't mean that they aren't a problem. The UK-based Institute for Government says, "It is non-tariff barriers that are the real impediment to international trade today."

There are two key areas of such trade impediments that the world needs to worry about. First are plant and animal health regulations. Such edicts may be reasonable at face value. Who wouldn't want safe food to eat and humane treatment of animals? However, the problem is that different countries frequently have vastly different ideas as to what is the right thing to do. For instance, recent discussions between the United Kingdom and the United States show differences in food safety and animal welfare. While America's poultry businesses rinse chicken carcasses in chlorinated water, Britain is unhappy with such practices. Deciding which position is correct may depend entirely on where you sit, making similar disagreements a knotty problem for negotiators.

The second set of non-tariff barriers listed in the UN report are requirements for labeling, manufacturing and country content. These requirements generally place a burden of increased paperwork and bureaucracy on companies. Effectively, the fact that there is no explicit cost doesn't mean there isn't an additional financial weight imposed on foreign goods. In some, but not all cases, companies may get so buried in paperwork that

the costs all but preclude doing business in a given country.

The UN report says that while such non-tariff measures were relatively limited in Asia two decades ago, they have increased steadily in the intervening years. That period also coincided with falling tariff levels in the region. Or, put another way, one trade barrier is at least partially getting replaced by the other.

Perhaps the most worrying thing for trade is a rise in inward-looking political populism. At its worst, that threatens to reverse globalization, writes Professor Harold James in *the Annual Review of Financial Economics*. Such movements in the United States, United Kingdom and other places have become increasingly influential in their efforts to undo free trade as we have come to know it. James sees an eerie parallel with the efforts to deglobalize that took place just before WWI, when countries routinely used as a method "of compensating losers" from trade. That is, of course, something we saw over the past couple of years in the United States.

James writes, "Globalization depends on a complex system of regulating cross-border flows and on embedding domestic rules in an international order." But these political populists now want to cast aside those rules as irrelevant and instead offer a dream that life would be better with lower levels of trade and with fewer "international entanglements." Hence, we get promises of higher trade barriers. To the extent that voters buy into such narratives, then globalization and trade as we know it may slow or even reverse. That's something to worry about. 💰

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DIRTY WATER



Courtesy Library of Congress

In 1799, Aaron Burr founded The Manhattan Company to provide fresh water to New York City amidst a widespread yellow fever epidemic. That company has since evolved into America's largest bank.

By Maura Ferguson and Sarah Poole

JUST PRIOR TO NEW YORK CITY closing all non-essential businesses due to the COVID-19 virus, the Museum of American Finance and the NYC Municipal Archives opened a new exhibit, “Ebb & Flow: Tapping into the History of New York City’s Water,” at 31 Chambers Street. This article has been adapted from a section of that exhibit.

Broad Street looking toward Federal Hall, 1797. Two water pumps are depicted on either side of the street.

1784–1834

After the Revolutionary War, New York City, growing in population and industry, languished without fresh water. Fires, drought and deforestation had a large impact on groundwater. Sanitation and well maintenance declined, and a famed tea water pump lost popularity. The Fresh Water Pond (often called the Collect Pond), used for drinking water, began filling up with dead animals and waste from laundries, furnaces, potteries and tanneries.

Epidemics returned, and while exactly how diseases such as yellow fever and cholera spread was yet unknown, it soon became clear that clean water was vital for good health. The death toll and tensions

ran high. New Yorkers pressed government to bring clean water to the city as a first priority. When it seemed delivering fresh water from Manhattan was no longer a viable option, the Common Council, the city’s authority on water matters, received a proposal to bring in water from farther afield.

Browne & Burr

Joseph Browne, a doctor from Westchester, believed the availability of fresh water was vital to the health of the city. In July 1798, he proposed piping in fresh water from “the River Bronx.” This plan was priced at \$200,000 (over \$5.5 million today). Dr. Browne proposed that a

Col Burr to the Manhattan Company 2^d

July 26. To amount overdrawn his A/c of \$ 44,500 was \$ 7,000
 found in real estate, having been charged to his account } 52,945 69

Subsd on \$ 45,945 by from Dec 23, 1801, the account
 being then so much overdrawn, to July 26, 1802. } 1569 70

Subsd on \$ 7000 from February 16, the note of that
 amount then falling due & debited, to July 26, 1802. } 150 33

To 1 Note due Jan 4, 1802, but remaining unpaid,
 endorsed by Lawrence & Dayton } 2 000

Subsd thereon from Jan 4 to July 26, 1802. } 16

To 1 Note due Feb 10, 1802, but remaining unpaid,
 endorsed by Manning, Willott } 2 440

Subsd thereon from Feb 10 to July 26, 1802. } 63,37

To 1 Note due Feb 15, 1802, but remaining unpaid, endorsed
 by Joseph Browne, and secured otherwise by real estate } 5,500

Subsd thereon from Feb 15 to July 26, 1802. } 143

Total Debit \$ 64,968 63

Subsd calculated to July 26, 1802, at the rate of 6¢ per Annum. —

Real estate mortgaged as security for the payment of the above Debt

Assignment of Mortgage to Manning Willott — 2500 } 3200 was included in
 Debit — Debit — John Hazard — 3500 } 6800 } 7300 was included in
 Debit — Debit — Harriott Willott — 4000 } 8000 } 8000 was included in
 Debit — Debit — John Franklin — 6000 } 6000 } 6000 was included in
 Debit — Debit — E Livingston — 5500 } 5500 } 5500 was included in
 Debit — Debit — Sam^r Dayton — 15000 } 15000 } 15000 was included in
 Debit — Debit — Thos Hunt — 2000 } 2000 } 2000 was included in
 Cash over — 41,500

Account of Aaron Burr's debt to the Manhattan Company, 1802.

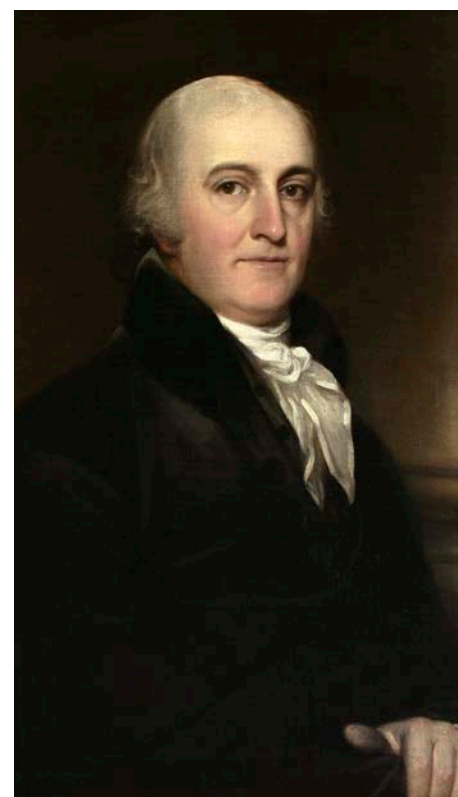
Brought over ————— \$ 41,500

Assignment of Mortgage to Andrew McCurdy — 3,000

Debit — Debit — to S. S. Latham — 7,000

The Note of \$ 3,500 endorsed by Joseph Browne, and was
 to be secured otherwise by real estate, is not secured by
 any separate mortgage; but Col Burr is a co-signatory
 on that note, pledges all the mortgages of its payment. } 5,500

————— \$ 57,000



Portrait of Mayor Richard Varick

private enterprise operating in the interest of the public might be the best way to quickly bring in the much-needed clean water supply, while accommodating the city's inability to cover such costs.

In his proposal, Browne recommended a company that would issue 2,000 shares of stock at \$100 per share with no individual owning more than one share. In return, the company would provide 300,000 gallons of water each day in a way that permitted all the water to be diverted to any location for use in firefighting. Unused water from the daily allotment could be used to clean the streets. Households would be charged \$10 per year in exchange for 30 gallons of water piped directly into each house per day; or households could pay \$2 per year to forgo hooking into the water system but retain protection from fire. The return on investment of the shareholders was expected to be 13% after 10 years.

The Common Council continued to accept plans for delivering clean water to the city, but made no decision until the summer's bout with yellow fever came to an end in November. Ultimately, the Common Council decided to move forward with a variation on Browne's

proposal. Opposed to a private company taking on the project, as it feared the company would gain while the city suffered, the Council proposed state legislation that authorized taxes, loans or auction sales to fund the project. Aaron Burr—attorney, war officer and politician—having previously held the positions of State Attorney General and US Senator, was newly elected to head the New York State Assembly with a wave of fellow anti-Federalists in the spring of 1797. Burr was also Browne's brother-in-law.

An Act

As the head of the New York State Assembly in 1799, Burr was responsible for seeing the bill through the legislative process. Newspapers published conflicting opinions on the quantity and quality of water in the Bronx, as well as the costs of bringing water to New York City. Burr's New York Assembly delegation found it difficult to prepare the bill for a full vote. He pressured other committeemen to allow a private company to run the project as Dr. Browne suggested. He reportedly even intercepted correspondence and excluded delegates from meetings to press his case.

Burr was granted a 10-day leave to return to Manhattan from Albany to get a better sense of the opinions of the Common Council and the public. On February 22, 1799, he visited Mayor Richard Varick with five other notable citizens, including his political rival, Alexander Hamilton (former US Secretary of the Treasury and founder of the Bank of New York). This group convinced the Mayor and Council to endorse Burr's plan. Hamilton, in particular, made the case for a private water company, fearing the city and state would be unable to pay for the venture. The proposed plan was for a private company, incorporated by the state, to be "capitalized at \$1 million in \$50 shares," of which the city would be entitled to a third. Those shares could be purchased through taxes, loans or state auctions. Seven directors would manage the company, six of whom would be elected plus one city official. This proposal won over the city officials, but Burr had a different idea about who would manage the company.

Meanwhile, Burr gathered public petitions to send back to the Assembly in support of the private company. James Fairlie introduced Burr's petitions in the Assembly on March 27, 1799, along with a draft



Manhattan Company Reservoir on Chambers Street, 1825. *Manual of the Corporation of the City of New York*, 1855.

bill: “An act for supplying the city of New-York with pure and wholesome water.” Instead of the typical debate and full vote, Burr arranged for Fairlie’s bill to go to a special committee of three, who approved it the next morning. The bill moved to the State Senate, and on March 30, Burr met with his friend Thomas Morris to help get the bill passed through a similar committee process. The bill officially became law on April 2, 1799.

Burr’s Bank

The company the State Legislature authorized was not what the city had agreed to, and it was unlike any other company in America. The Manhattan Company would be capitalized at \$2 million—double what Hamilton had proposed—and only a small fraction of its shares would be available to the city. The number of elected directors increased from six to 12, diminishing the power of the city officials. This “water company” was not required to repair streets after laying pipe, it could set rates for service as it saw fit and it was not obliged to provide free water for firefighting. Furthermore, it was granted a perpetual charter if it succeeded in delivering

fresh water for the citizens of New York within 10 years. What made this company most unique, however, was a small clause in the ninth paragraph of the charter:

And it be further enacted, That it shall and may be lawful for the said company to employ all such surplus capital as may belong or accrue to the said company in the purchase of public or other stock, or in any monied transactions or operations not inconsistent with the constitution and laws of this state or of the United States, for the sole benefit of the said company.

This clause allowed the company to invest its surplus capital and engage in lawful financial transactions of its choosing. Shortly after the water company’s founding, it opened an office of discount and deposit to direct the use of the company’s surplus capital and perform banking functions, including taking deposits and lending money. Ultimately, the company used only \$100,000 of the authorized \$2 million for the water system. The rest was diverted to start what would become the Bank of the Manhattan Company, which opened at 40 Wall Street in September 1799. In effect, it provided Burr with a

Republican bank to rival Hamilton’s Federalist Bank of New York.

The Manhattan Company

The Manhattan Company wasted no time in getting started. Its charter was delivered to the Common Council on April 10, 1799, a week after the bill was signed into law, and the company convened its first meeting the next day. Officers decided against Dr. Browne’s costly Bronx River plan, which had already been approved by the city. Instead, because it would be fastest (and cheapest), the Board voted to use the already-polluted Collect Pond as the water supply. The Manhattan Company existed because of the outcry for clean water in the face of epidemics and fires, but it did not prioritize and, thereby, did not ultimately fulfill its purpose of providing fresh water.

The company used ground wells within the city, rather than bringing water from the Bronx. It placed ground wells in unsanitary locations and risked mixing sewage with fresh water. It built a waterworks next to the Collect Pond and used horses to work the pumps until they were replaced by a steam engine in 1803. The 100,000-gallon reservoir the company

and other disorderly persons, where drunkenness and debaucheries of every kind, are committed, which often produce fevers of the most serious nature, especially during the summer months. This evil ought to be corrected.

22^{ndly}

It is found that new streets are frequently laid out by owners of ground in various parts of this City, and its suburbs so narrow as to prevent the free circulation of air, and that the borders of such streets are generally crowded with small wooden Houses, with very small, and in some cases no yards.

It is therefore desirable that in future, no street should be laid out within the City of New York but such as shall be first approved of by the Common Council. Experience has shown, that during the prevalence of pestilence in this City, it has proved particularly fatal in such Streets.

23^{dly}

In suggesting the means of removing the causes of pestilential diseases, we consider a plentiful supply of fresh water as one of the most powerful; and earnestly recommend that some plan for its introduction into this City, be carried into execution as soon as possible.

built instead of the planned million-gallon reservoir ensured it would never meet the needs of the growing city. Crudely hollowed out pine logs were used. The logs did not insulate well, and water froze in the winter. They were also easily pierced by tree roots, which caused backups in the system.

Only a small number of households participated. During the height of a yellow fever outbreak in the summer of 1803, the company suspended water service for two weeks for well repairs, with some reporting outages of nine weeks. The number of households drinking Manhattan Company water dwindled.

Tapped Out

Embroided in a three-year legal battle with the city over payment for the Manhattan Company's damage to the streets after laying pipes, Hamilton defended the company until he died in 1804 in a duel at the hands of the company's creator (and sitting Vice President of the United States), Aaron Burr. Burr's deception about his intentions to start a competitor bank with

the Manhattan Company was one of the many disagreements between the two that eventually led to the duel. Burr's career, in politics and otherwise, was all but over after that day. The company settled for \$5,000 on a \$6,881.14 bill. Burr's relationship with the company had already been severed, as he was ousted in 1802 after his \$48,000 loan from the company bank (to pay off old debts) grew to \$120,000.

With exclusive water rights, the Manhattan Company continued as the only supplier of water until the 1840s. During this period, New York City suffered two major cholera epidemics. Cholera killed more than 3,500 people in 1832 and another 5,000 in 1849.

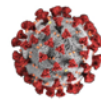
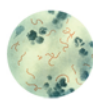
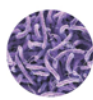
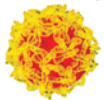
In the 1820s, the Common Council attempted once again to create a system to bring fresh water from the Bronx River. Civil engineer Canvass White completed a detailed feasibility survey in 1824, and the New York Water Works Company was created to build the system. The new company never began construction, as its plans conflicted with those of the New-York and Sharon Canal Company, which was chartered a year earlier to construct

a canal between Connecticut and New York, and provide drinking water to New York City. The canal company later determined that bringing water from anywhere farther than the Croton River was too expensive. Many other surveys funded by the city came to the same conclusion. Finally, in the 1830s the city embarked on creating a reliable municipal water system, the Croton System.

After the Croton System opened, the Manhattan Company waterworks emptied out and was torn down in the early 20th century. To maintain its state charter, water was pumped by a bank employee at the site every day until 1923. The Bank of the Manhattan Company is the earliest predecessor of today's JPMorgan Chase, the largest bank in the United States. In 1965, Chase Manhattan was granted a federal charter that was no longer dependent on providing clean and wholesome water. \$

Maura Ferguson is the Museum's Director of Exhibits. Sarah Poole is the Museum's Collections Manager. They are the co-curators of "Ebb & Flow: Tapping into the History of New York City's Water."

Pandemics & Epidemics



Financial and Economic Effects

www.moaf.org/pandemics

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COMING
SOON**

Pandemics and Epidemics

Financial and Economic Effects



National Museum of Health and Medicine

By Richard Sylla, Janice Traflet
and Robert E. Wright

DURING THE FIRST SEVEN WEEKS of 2020, despite ominous news from China, Italy and Iran about the spread of the COVID-19 virus, US stock indexes hit new all-time highs. Then, in little more than a month, the market crashed. By March 23, the Dow Industrials dropped 37%; the S&P 500, 34%; and the NASDAQ Composite, 30%.

It seemed that the markets suddenly realized that the virus's spread to the United States would cause widespread business shutdowns, closings of schools and universities, and stay-at-home orders

from public officials. More than 20 million American workers, a seventh of the labor force, would apply for unemployment benefits between mid-March and mid-April. All of that happened. A major recession, if not a depression, seemed imminent.

Then, in response to the crisis, the Federal Reserve, Congress and the Trump administration implemented a number of unprecedented monetary and fiscal measures to alleviate the public-health and economic crises. By mid-April, as the numbers of infections and deaths from the virus mounted daily, the markets staged a sharp recovery. In less than a month, from the March lows the Dow rose 30%, the S&P 29% and the NASDAQ 26%. Justified or not—only time will tell—the markets' collective wisdom seemed to think that the virus would soon go away and the government's drastic measures would soon bring a sharp economic recovery.

Is this what typically happens during epidemics and pandemics? Because they don't occur often anymore, most people have not experienced them and don't have a clue as to what is typical. But they have happened often enough in history, which can offer some guidance. Here, seeking that guidance, we examine a number, but by no means all, of the epidemics and pandemics that have occurred over the course of US history.

Yellow Fever Epidemic (Philadelphia, 1793)

The epidemic hit what was then the nation's capital in late summer and lasted several months. The most likely source of the outbreak is that the infection was brought to the city by refugees fleeing a slave revolt in Santo Domingo (modern-day Haiti), where mosquitoes made

Emergency hospital during the 1918 influenza epidemic, Camp Funston, Kansas.

the fever a regular occurrence. Between August 1 and November 9, the fever killed more than 5,000 Philadelphians—about 10% of a population of 50,000 before the outbreak induced some 20,000 residents to flee. Among them was President George Washington, who went home to Mount Vernon in early September.

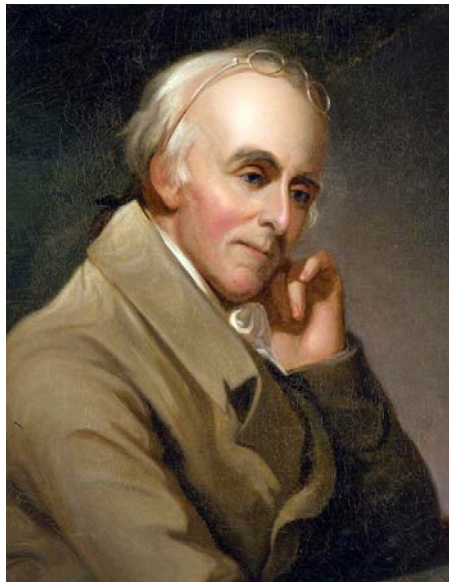
One person who did not flee in time to avoid the infection was Treasury Secretary Alexander Hamilton, who caught the fever in early September. His wife was also stricken. Both were quickly cured by a cold-bath treatment recommended by Dr. Edward Stevens, an old friend. But when the Hamilton family went to Albany, New York, to recuperate at Mrs. Hamilton's father's home, they were almost denied entry to the city because of unwarranted fears that they would bring the malady with them.

Philadelphia's most eminent physician, Benjamin Rush, used a harsher treatment than Stevens' method, blood-letting and mercury purges, and lost many patients. The two doctors became involved in a public debate over whose treatment was best. In 2020, we have witnessed efforts to keep possibly infected outsiders away as well as debates over treatments. They are nothing new.

Merchant-financier Stephen Girard stayed on in Philadelphia, using some of his fortune and managerial skills to tend to the sick. He espoused the Stevens treatment and became a hero to Philadelphians.

During the epidemic, the prices of the young nation's two most important securities, US 6% bonds (Sixes) and shares in the Bank of the United States (BUS), both dipped slightly in early August before rebounding and even increasing until quotations for the Philadelphia market ceased in early September. Specifically, Sixes dropped from \$90 (per \$100 bond) to \$88.75 before hitting \$91.67, while BUS shares went from \$420 to \$412 to \$428, suggesting a "flight to quality" scenario as some wealthy Philadelphians on the hoof sold real estate and specie for more liquid and transportable safe assets. Unlike 2020, the securities market did not crash. It simply shut down during the epidemic.

The reaction in the New York market, where both securities also traded, was similar. When quotations began again in Philadelphia on January 1, 1794, BUS shares were at \$440 in Philadelphia and \$444 in



Portrait of Benjamin Rush, Philadelphia's most eminent physician during the yellow fever epidemic of 1793, by Charles Willson Peale, circa 1818.

New York, and Sixes were at exactly \$90 in both markets, suggesting that the temporary cessation of trading in Philadelphia did not damage market integration. In fact, Philadelphians eager to buy or sell those securities probably just did business via New York during the hiatus.

Yellow Fever Epidemic (New York City, 1798)

Outbreaks of yellow fever were an almost annual occurrence in the decade 1795–1804 and reached epidemic proportions in New York similar to Philadelphia's outbreak five years earlier from July to October 1798. Some 2,100 of the city's population of about 35,000 died of the fever that year. The toll included prominent citizens such as Anti-Federalist Melancton Smith and printer Thomas Greenleaf. Street vendors hawked "Coffins—coffins of all sizes." Many of the dead were buried in mass graves on what is now the site of Washington Square Park, which then was on the outskirts of the city.

In 1799, the city's two chartered banks, the Bank of New York and the branch of the Bank of the United States, relocated from Wall Street to Greenwich Village, also on the outskirts, during the expected fever months. The sites of the banks became the West Village's Bank Street.

That same year, the state chartered the Manhattan Company, which proposed to alleviate fever outbreaks by supplying

purified water to the city. Sponsored by Aaron Burr, its real purpose was banking. Burr inserted a clause into the charter that allowed any surplus capital the company had to be "employed in the purchase of public and private stocks, or in any other moneyed transactions or operations" that were legal. The Manhattan Company was supposed to supply a lot of water and do a little banking. Instead, it supplied little water and did a lot of banking.

Securities prices rose during the epidemic and by December were significantly higher: Bank of New York from 132% to 134% of par; BUS from \$464 to \$500; US Deferreds from \$63.75 to \$67.50; US Sixes from \$73.75 to \$80; US Threes from \$45 to \$50.

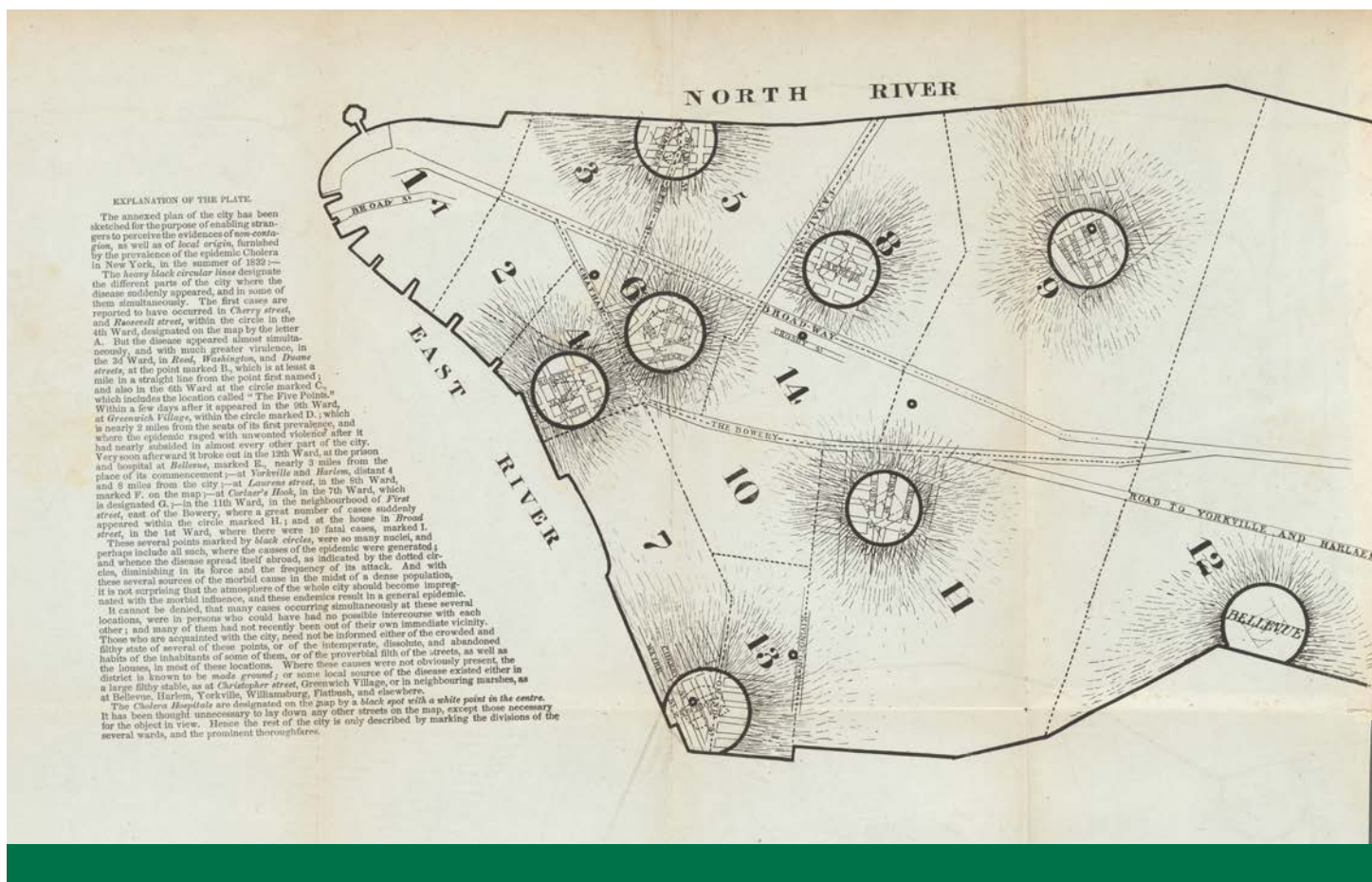
Cholera Epidemic (New York City, 1832)

When cholera broke out in 1832, New York City's population had increased to 250,000, many of them recent immigrants living below 14th Street. The epidemic killed some 3,500, a mortality rate equivalent to more than 100,000 when applied to the city's current population. When it peaked in Manhattan in July, President Andrew Jackson was in the process of vetoing Congress's bill to re-charter the second Bank of the United States and completely repaying the US national debt.

The most liquid US government bond paid 5% interest per year. While the cholera epidemic raged, leading to a mass exodus from the city, the Fives not only continued to trade, they traded above par, in a tight range from \$103.75 to \$104.125 (per \$100 principal) throughout the summer. Most cholera victims were poor and not investors, but the disruption of the city's usual business was palpable. Most trades, though, were over-the-counter and through brokers, who, like many modern knowledge workers, could conduct business even when out of the office or out of town.

Unsurprisingly, then, the stocks of private commercial banks, like the Bank of America, Butchers and Drovers, and Chemical, also remained range-bound all summer, as did the shares of New York, Neptune, Merchants Fire and other insurers. New York Gas Light also traded in a range between \$145 and \$155 throughout the summer.

Railroads exhibited a more complex pattern. Harlem dipped slightly at first, from \$105 to \$95.50 per share, in late July



Cholera Map of New York City, 1832.

before rebounding to \$103 by the end of August. The Mohawk and the Paterson and Hudson Railroads, by contrast, both dropped by \$15 to \$20 per share over the summer and recovered much more slowly, not returning to their 1832 highs until April 1833. Many railroad stocks were already considered "fancies," the newly launched playthings of speculators, so it is not clear that any of those movements had anything to do with cholera.

Massachusetts Scarlet Fever Epidemic (1858–1859)

Scarlet fever, nee scarlatina, killed 2,089 people, almost all younger than 16 years old, in Massachusetts between December 1858 and December 1859. According to the 1860 Census, the population of the state was about 1.2 million, of whom about 350,000 were under 16. Some of the children were employed, but the labor force exceeded 450,000, so the shock was more emotional than economic.

Indeed, the Boston stock market was in

bull mode throughout 1859. While most bank and some insurance stocks remained range-bound, some insurers, including American, Boston, Boylston, City and Commercial were up strongly. The Boston and Lowell Railroad increased from \$89 to \$98 per share over the year, and the Boston and Providence and Boston and Worcester railroads were likewise steadily but modestly up.

The biggest gains were in manufacturing. Amoskeag was up from \$890 to \$1,000 per share over the year, Appleton from \$950 to \$1,000, Bates from \$85 to \$106, Boott from \$470 to \$725, Boston and Roxbury Mill Dam from \$29 to \$50 and Boston Duck from \$375 to \$500. If the death of young workers, or potential workers, put an upward strain on wages in 1859, it was clearly swamped by other effects.

How could life go on while thousands of children died and thousands more lay stricken? A better question might be, how could it not? More people per 1,000 died at each age then, especially the younger ages. Death was a simple fact of life that people

suffered through with lots of prayer and sex for reproductive purposes. Families that lost children usually tried to have more of them.

The government's role in the scarlet fever epidemic, like the yellow fever and cholera epidemics, was limited by constitutions, precedent and expectation. Every family was left to its own devices. Medical treatment was palliative at best. Those obviously ill were quarantined, but healthy people continued business as usual. No hope for a miracle cure was held, and any attempt to shut down Boston or other commercial centers to stop the spread would have been met with derision and then open rebellion. Even in small towns like Deerfield, local factories remained open, making cutlery in Deerfield's case.

The frequently occurring epidemics of 18th- and 19th-century America, like the ones sketched above, had limited economic and financial effects. In part, this was because they were localized epidemics over in a few months, not pandemics affecting every place and everyone. Most



Officers of the Seattle Police Department wearing masks during the Spanish influenza pandemic, December 1918.

securities holders—individuals such as President Washington and institutions such as the Bank of New York—were wealthy enough to relocate, leaving most of the suffering and death to the laboring classes and the poor. In 1793, if securities prices fell or were unavailable in Philadelphia, an investor could sell in New York, which had no epidemic and where markets remained open. Such cross-market arbitrages prevented crashes in a city hit by an epidemic.

In short, the decentralized nature of securities trading systems, along with different attitudes toward death and limits on governmental powers, minimized the financial and economic fallout of public-health crises. All early American investors had to fear was the epidemic itself, not lost liquidity or government-mandated shutdowns of large sectors of the economy.

Spanish Flu Pandemic (1918–1920)

This worldwide pandemic was quite different from earlier localized epidemics.

Across the world, the flu killed about 40 million people, or 2% of the world's population. Since it is estimated that a third of that population became infected, the death rate for those infected was about 6%.

In the United States, about 550,000 died of the flu, or half a percent of the US population. A first, mild wave of infections came in the spring of 1918, followed by a more deadly one from September 1918 to January 1919. One of those killed was Frederick Trump, grandfather of President Donald Trump. President Woodrow Wilson caught the flu but survived, albeit impaired, as did Walt Disney, General John Pershing and the leaders of France and the UK, Clemenceau and Lloyd George.

World War I was in its last year in 1918, and movements of soldiers internationally and domestically helped to spread the flu virus. The overlap of the war and the pandemic makes it difficult to isolate the economic and financial effects of each. But economist Robert Barro and collaborators took a stab at separating the war and flu effects by means of econometric

analysis. They estimated that both war and flu depressed real GDP growth and consumption spending, and raised inflation in both the world and the United States. The flu was less important than the war in these outcomes, but not insignificant.

They found for the United States that the flu by itself reduced real stock returns by seven percentage points and returns on short-term government debt by 3.5 percentage points, while it raised inflation by five percentage points. These results are broadly consistent with the Dow Jones average increasing in nominal terms by 10.5% in 1918, when the CPI inflation rate was above 15%, and both annual real GDP growth overall and per capita being less than 1% during the years 1918–19.

Asian Flu Pandemic (1957–1958)

This pandemic began in China in late 1956 or early 1957, and by the summer of 1957 it began to spread around the world. Ultimately, it would kill an estimated 1–2 million people. By October, it was in full

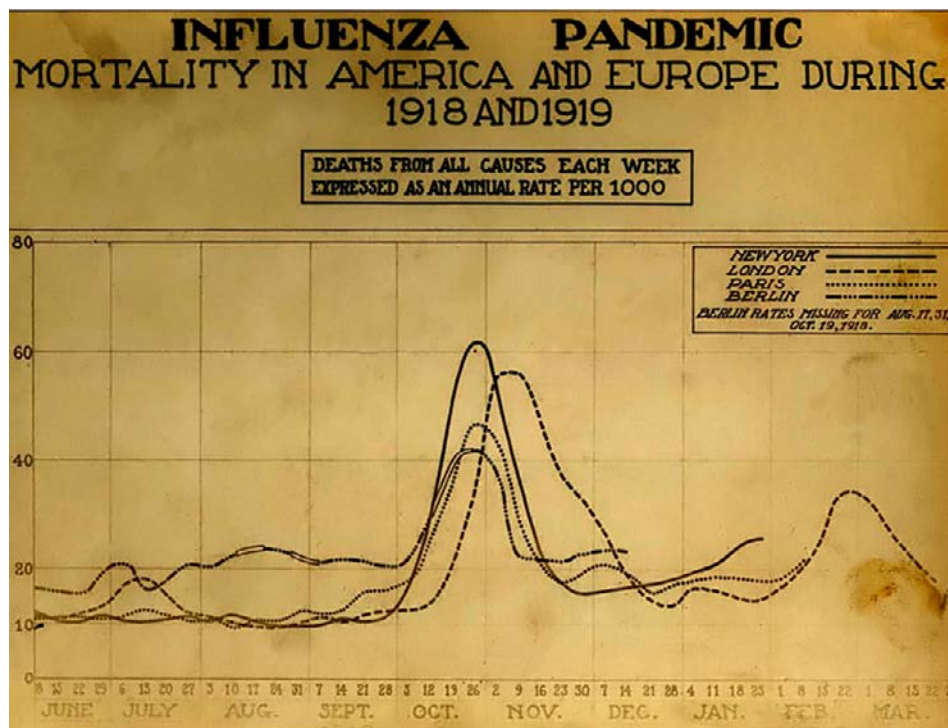


Chart showing mortality from the 1918 influenza pandemic in the United States and Europe.

swing in the United States. The first wave that fall affected mostly school children, and some schools were closed. But few children died. A second wave in early 1918 was more deadly, affecting in particular pregnant women and elderly people with pre-existing conditions. Estimated US deaths ranged from 70,000 to 116,000.

In 1918, the Dow Industrials peaked on July 12 and then dropped 19.4% to a low on October 22. Curiously, the flu outbreak typically was *not* cited by the media as a factor in the market downturn. It soon became apparent that the US economy entered what would prove to be a mild recession in August 1918, one that would last through April 1919. When the recession began, the pending flu problem was known to health experts and officials, and they were on top of the flu epidemic before it hit the United States. Indeed they already had developed a vaccine, which was well reported in the press. Even though supplies of the vaccine were initially limited, undoubtedly it was encouraging to investors and others to know that a vaccine existed.

The sharp stock market decline began before the recession and before the public, if not scientists and officials, became aware of the flu problem. It thus proved

its worth as a leading indicator. Better reasons for the late October lows were a confrontation that fall between federal officials and Arkansas's governor over the integration of public schools, and especially rising Cold War tensions. On October 4, the Soviet Union successfully launched its Sputnik, the first man-made satellite to orbit the Earth, prompting considerable American angst and investor consternation. Later that fall, President Dwight Eisenhower suffered a mild stroke, and the failure of an American test rocket put a damper on the market's recovery from its October low.

Lessons

No two crises are alike. Some contagions infect fewer people than others. Some are deadlier than others, and some spread more easily. Some engulf a city but leave other areas unscathed and able to help. Others hit large swathes of continents, hemispheres, even the entire globe, if not simultaneously then, in our increasingly integrated world, in rapid succession. Securities markets have always tended to be good leading indicators of future earnings expectations and will move rapidly up and down as new information

influences those expectations. Volatility will be highest when political decisions influence earnings expectations most, as they have during the present pandemic. **\$**

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ROGER F. MURRAY

The Bridge between Benjamin Graham and Modern Value Investing

By James Russell Kelly

Almost everyone knows of Benjamin Graham, the founder of fundamental security analysis, known today as value investing. But very few people know of Roger F. Murray, the Columbia Business School professor who took up the academic torch of security analysis at Columbia when Graham retired. Murray taught an entire generation of students from 1956 to 1978, including many highly successful investors, such as Mario Gabelli, Leon Cooperman, Chuck Royce, Art Samberg and Glenn Greenberg.

I took his Security Analysis course in 1968, during the peak of the Vietnam anti-war protests at Columbia University. More than 50 years have passed, but Professor Murray and his course are still vividly in my mind. Great teachers make those kinds of impressions.

Murray was 5'10", very thin, and always formally dressed in a vested dark suit, white shirt and tie with his Phi Beta Kappa key proudly displayed. His teaching style was also formal, which was the standard at that time. In contrast to his lecturing style, he was a friendly, welcoming mentor: I met with him several times after class as well as after graduation to seek his advice.

He was a tough grader, however. Leon Cooperman recalls a paper he wrote comparing financial ratios over 20 years for Burlington Industries and J.P. Stevens. Murray carefully checked each ratio and spotted only one transposition, which he highlighted for correction.

His lectures emphasized comprehensive analysis of financial statements starting with the balance sheet, primarily using ratio analysis. The objective was very basic—to determine a company's intrinsic value, which he defined as "the

true underlying central tendency in the valuation of an enterprise." A margin of safety exists if the intrinsic value materially exceeds the market price. Pure Benjamin Graham!

A major recurring theme in his lectures was the rapidly growing importance of pensions in society. To a group of youthful students, retirement was not exactly a captivating topic. Little did we know about Murray's prominent role in the development of pension fund investing at the College Retirement Equities Fund (CREF), or in the passage of the Keogh Plan and Individual Retirement Account.

Personal History

Roger F. Murray II was born on October 11, 1911, the son of Walter Fletcher Murray (1874–1947) and Mary Campbell van Horne (1883–1960). The Murray family lived one mile south of Columbia University, at 316 West 95th Street, between Riverside Drive and West End Avenue on the Upper West Side of Manhattan.

Murray's father, Walter, was a successful insurance broker who co-founded a company with his brother, Roger F. Murray I. RF Murray & Bro. Insurance was located at 8 Broadway in the Financial District of Lower Manhattan. The company specialized in fire, marine, life, accident and other lines of insurance. This may explain Murray's interest in pension funds throughout his career.

He had two older sisters, Grace (1906–1992) and Mary (1910–2000). Grace Murray Hopper, a Ph.D. graduate in math at Yale University, was a pioneer in the field of computer science and programming. She helped to develop MARK-1, the first electro-mechanical computer in the United States; UNIVAC, the first



Roger Murray (right) with Mario Gabelli.



Roger Murray speaks with attendees at his 1993 lecture series.

commercial computer; FLOW-MATIC, the first language-based programming language; and COBOL, the most extensively used computer language in the world. She was a long-serving officer in the US Navy, who rose to the position of Rear Admiral. The Navy destroyer, *USS Hopper*, was named in her honor in 1997. She was the recipient of more than 40 honorary degrees. After her death, she posthumously received the Presidential Medal of Freedom for her “lifelong leadership role in the field of computer science.”

Roger attended Phillips Andover Academy and Yale, graduating Phi Beta Kappa in 1932. After graduation, he joined the Bankers Trust Company as one of only three new associates hired in 1932, at the depth of the Great Depression. He attended New York University at night to earn his MBA and Ph.D. degrees. His dissertation, entitled “Preferred Stocks of Industrial Companies,” was published in 1942.

In 1934, he married Agnes McDede (1908–2001). They lived at 230 Riverside Drive, at the corner of W. 95th Street, where he lived as a child.

In 1944, he enlisted in the Army Air Force and served as a captain during the war until his discharge in December 1945. He rejoined Bankers Trust as an investment manager, chief economist and vice president until his retirement from banking in 1955.

Academic Career (1956–1978)

In 1956, Benjamin Graham retired from teaching security analysis at Columbia University and moved to Beverly Hills. Dean Courtney Brown was looking for administrative assistance and for a successor to follow Graham. He approached Roger Murray, whom he had known for years, to join the faculty as associate dean and to coordinate with Benjamin Graham and David Dodd to continue their teachings. In 1958, Murray was appointed as the first S. Sloan Colt Professor of Banking, a chair he held until 1965. In addition to Graham and Dodd’s security analysis, he taught courses on capital markets and portfolio management.

From 1965 to 1970, Murray continued to teach as an adjunct professor while working full time on his passion of promoting equity investment to the pension fund community at the College Retirement Equity Fund.

In 1970, Murray rejoined Columbia Business School full time as the S. Sloan Colt Professor of Banking and Finance. He continued to teach and publish academic research until his retirement in 1978.

From 1952 to 1984, he published many articles on pensions, capital markets and macro issues in the *Journal of Finance*, the *Financial Analysts Journal*, the *Journal*

of *Risk and Insurance* and several other prestigious journals. Interestingly, the majority of his articles were published in the *Financial Analysts Journal* of the CFA Institute, which had been founded by Benjamin Graham in 1937, then called the New York Society of Security Analysts.

Academic Honors

In 1964, Murray was elected president of the American Finance Association, the premier academic organization devoted to the study and promotion of knowledge about financial economics. It is also the publisher of the *Journal of Finance*.

In 1974, he was appointed to the New York State Council of Economic Advisors by then-governor Nelson Rockefeller. In 1993, Murray received the CFA Institute’s prestigious Nicholas Molodovsky Award for his outstanding contribution to investment research. Benjamin Graham received this award in 1975.

College Retirement Equity Fund (1965–1970)

Professor Murray joined the College Retirement Equity Fund (CREF), an affiliate of the Teachers Insurance Annuity Association (TIAA), in 1965 as vice president and economist to develop its investment operation. In 1967, he was elected chairman of the CREF Finance Committee.

At that time, pension funds invested primarily in bonds. Stocks were regarded as a high-risk, volatile asset class and, therefore, not appropriate for conservative pension funds. CREF challenged that view, citing long-term superior returns of equities over bonds even though the short-term volatility was higher. The long-term investment horizon of pension funds made short-term volatility irrelevant. In fact, at times highly volatile securities can be viewed as an opportunity, *not* a risk, which is a core tenet of Benjamin Graham’s teachings.

Roger Murray’s achievements at CREF are recounted in *It’s My Retirement Money—Take Good Care of It: The TIAA-CREF Story*, by William C. Greenough, president of TIAA-CREF from 1957 until his retirement in 1979. The following is a summary of Greenough’s recollections of Murray’s contribution to the development of CREF.

Dr. Roger Murray joined CREF on February 1, 1965, as vice president and economist, to head the CREF investment operation...He was elected chairman of the CREF finance committee and executive vice president of CREF in 1967 and served in those capacities until 1970. He had already served on the CREF board for nine years and on the finance committee for five years before joining the staff full time.

Under Dr. Murray's leadership, CREF's investment staff developed a deep knowledge of the literature on risk management, modern portfolio theory, and actual portfolio management. He established an extensive research program using both inside talent and university research facilities. In 1970, Dr. Murray asked to be relieved of his duties as CREF investment head after the new team was in place so he could return to Columbia Business School. During his tenure, CREF's assets grew from \$500 million in 1965 to \$1.5 billion in 1970.

His tenure at CREF was also marked by his social consciousness and activism. *Institutional Investor* magazine published an insightful cover story article in 1968 entitled, "Roger Murray: Portrait of the Professor as a Fund Manager." The author, Penelope Orth, observed that in an age when many institutional investors are passive stockholders, CREF was both active and articulate.

Murray attended the 1967 shareholder meeting of Eastman Kodak which had been picketed by the civil rights group FIGHT to expand their training programs and hiring policies among black residents of Rochester. CREF owned 181,500 shares of Kodak when Murray addressed the shareholders: "The 225,000 educators who are policy holders of CREF have great confidence in what education can do and great confidence in what Kodak could do to bring the hard core unemployed into an employable position." The crowd roared in approval.

In his interview for the article, Murray stated, "We are sensitive to the employment practices of companies in which we invest. We do not knowingly have our money in a company that practices discrimination of any kind."

The assets under management of CREF have grown from \$500 million in 1965 to \$234 billion in December 2019. The total assets under management of TIAA, which includes both CREF and Nuveen Asset Management, is \$1.1 trillion. It is one of the world's largest asset managers.

The Common Fund (1969–1981)

After two years of preparation, The Common Fund was launched in 1971 by a grant of \$2.8 million from the Ford Foundation as a non-profit organization to manage university endowment assets. It was a natural extension of CREF's success in managing the retirement assets of university teachers. Roger Murray was a founding trustee of the Common Fund from 1969 to 1981 and Chairman of the Board from 1977 until 1980, after he retired from Columbia Business School.

In 1974, at the bottom of a bear market when colleges were withdrawing funds from the Common Fund equity portfolio, he wrote a paper for the annual report in defense of equity investment. In it, he stated, "My position was that this was an opportunity of a lifetime to buy equities." Again, pure Benjamin Graham.

In 1986, Murray wrote the article "The Formative Years: A Founder Reflects" to celebrate the 25th anniversary of the Common Fund. He recounted the legal obstacles faced by trustees in overspending dividend income of equities in their operating budgets, and in commingling assets of beneficiaries in a common pool of investments. These issues led the way to the founding of the Common Fund. Since its inception, the organization has grown from \$63 million in 1971 to \$25.2 billion today.

Keogh Plan and Individual Retirement Account (IRA)

Professor Murray was highly influential in the passage of these landmark laws. In his interview with Peter Tanous in *Investment Gurus*, Murray recounts his experience. He states that Gene Keogh was a member of the House Ways and Means Committee who sponsored legislation to allow self-employed individuals to set up pension retirement accounts. Murray was the expert witness who testified to Congress each year over 10 years that the Treasury's estimates of revenue loss were much too

high. Thanks largely to Murray's persistent advocacy, the Keogh Plan legislation was finally passed in 1962.

As a Board Member of CREF, Murray was also thinking about creating pension benefits that were completely portable for persons not covered by a pension plan—an "individual retirement account."

As part of the Hunt Commission's study of US financial institutions, Murray was invited to write a position paper addressing fiduciary standards for the protection of pensions. Murray's paper mentioned the gap in pension plan availability for individuals who are not part of a significant group. He proposed an individual retirement account as a potential remedy.

The Hunt Commission report led to the Employment Retirement Income Security Act (ERISA) in 1974, which contained a tax benefit for the self-employed, the deductibility of contributions to an IRA.

Relationship with Warren Buffett

Murray told Tanous that Warren Buffett "had come and gone before I got there [Columbia]. I did not meet up with him until later. One of the good sessions he and I had was when we were both on the SEC Advisory Committee on Corporate Disclosure, which was a fun enterprise. David Dodd originally introduced me to Buffett, but on our committee, we had the opportunity to sit around the table and really discuss things at length... He comes back to Columbia on occasion. When I taught the class in value analysis...he was one of our guest speakers."

The bridge from Benjamin Graham to modern value investing as personified by Warren Buffett was under construction.

Retirement

Murray retired from Columbia Business School in 1978 and moved to the family's country home in Wolfeboro, New Hampshire, on the shore of Lake Wentworth, which is adjacent to Lake Winnepesaukee. His definition of retirement was not conventional, however. It included membership on the local school board, selectman of the Town of Wolfeboro and a member of the boards of Andover, Smith College and Douglass College.

In addition, he served on the board of directors of the Common Fund and several companies, » continued on page 39

The Importance of Oil in World War II



Photo by Margaret Bourke-White/The LIFE Picture Collection via Getty Images

By Michael A. Martorelli

IT MAY BE AN OVERSTATEMENT to assert that World War II was all about oil. But the historical record suggests that concerns about supplying oil to mobile military forces on land, on the sea and in the air weighed heavy on the minds of senior leaders of the war's major combatants. This examination of those efforts in Japan, Germany and the United States focuses on the raw material of oil rather than the hundreds of distillates required to operate and lubricate various types of trucks, tanks, planes, ships and other machines of war.

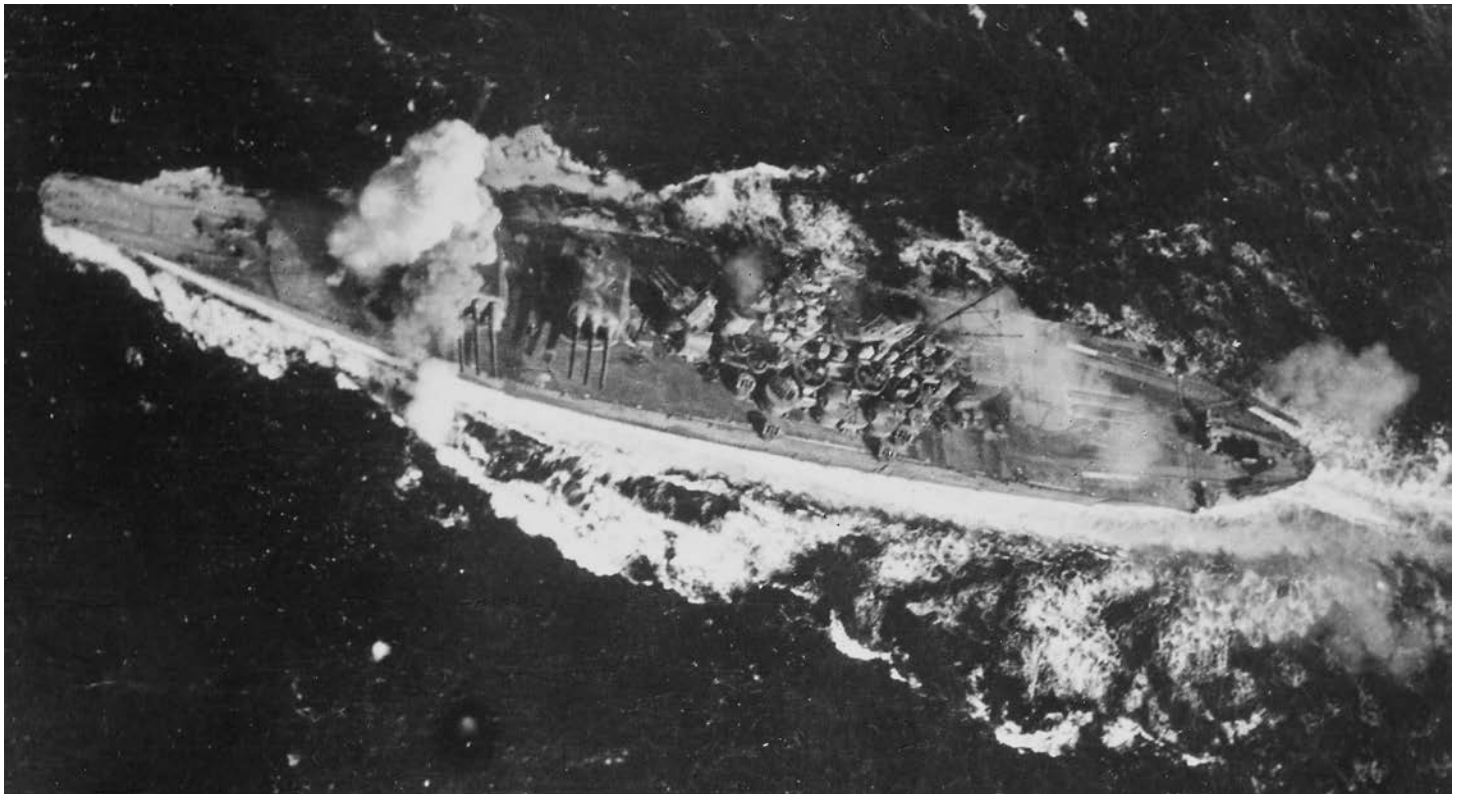
Aerial view of bomb-damaged oil storage tanks at the I.G. Faben industrial plant on the bank of the Rhine River after an Allied air attack on the devastated city, circa 1945.

Japan Faces a Continuous Challenge

In the mid-1930s, Japanese leaders began laying plans for military and economic dominance over what they would later label the Greater East Asia Co-Prosperity Sphere. They realized that creating an "Asia for Asians" would require the aggressive development of their country's limited natural resources and the "liberation" of many nearby resource-rich lands from their Western colonial powers. In 1937, army generals lusted after the mineral deposits in Manchuria, Inner Mongolia and French Indochina. The admirals of the Imperial Navy coveted the oil fields of Borneo, Malaya and other islands in the Dutch East Indies, i.e. the Southern Zone. At that time, Japan was importing 80% of its growing oil requirements from the

United States. So the government pushed for more production from the country's own refining industry and re-established a long dormant (and ultimately unsuccessful) program trying to synthesize liquid fuel from coal.

In July 1941, with its oil supplies steadily diminishing, Japan launched its long-contemplated invasion of southern Indochina. That action prompted President Franklin D. Roosevelt to freeze Japan's financial assets in the United States and impose what became a *de facto* embargo on selling the country any more oil. Admiral Isoroku Yamamoto, the Commander in Chief of Japan's Combined Fleet, believed a pre-emptive attack on the American Navy at Pearl Harbor was a worthwhile military objective. He also viewed the strike as both a way to provide protection for the Japanese army's flank as



Aerial view of two bombs making direct hits on the Japanese battleship *Yamato*, which is fleeing the 2nd Battle of the Philippine Sea.

it moved to invade the Southern Zone and a way of securing important sea lanes for the oil tankers that would soon be shipping oil to the Home Islands.

By the end of March 1942, Japanese troops had indeed conquered the Dutch East Indies, New Guinea, many of the Solomon Islands and large parts of the Philippines. Retreating oil field workers in Borneo, Java and elsewhere were only partially successful in their efforts to destroy the wells, pumps and refineries on those islands and, thereby, prevent their use by Japanese forces. Premier Hideki Tojo announced that the country's oil problem had been solved; he was only partially correct.

The Japanese were able to rehabilitate a certain number of oil refineries and build some new ones throughout the Southern Zone. But they still needed to move large supplies of crude oil and/or refined products to operating bases in the western Pacific and the Home Islands. During 1942 and most of 1943, the American submarine fleet focused most of its offensive efforts on Japanese naval targets. In the fall of 1943, submariners shifted their strategy and began occupying important shipping lanes in order to disrupt Japan's oil supply lines. The results of that change were

dramatic. In August 1943, a large Japanese tanker fleet was shipping about 1.75 million barrels of oil per month from the Southern Zone to the Home Islands. By October 1944, a much smaller fleet was able to send only 300,000 barrels per month. By April 1945, the almost non-existent commercial fleet was no longer able to supply the Home Islands with this vital commodity.

Japan's problems in maintaining adequate supplies of oil affected not only strategic choices made by the country's leaders, but also tactical decisions made by local military commanders.

- In mid-1942, naval officers concerned about the large amounts of fuel used in the battles of the Coral Sea and Midway felt constrained in fully deploying their fuel-eating battleships in subsequent operations in the Solomons and the Marianas.
- In the Battle of the Philippine Sea in June 1944, Admiral Teijiro Toyoda had to deploy his fleet in a place convenient for refueling, not the place which tactical considerations dictated.
- Aviators of the Imperial Japanese Navy Air Service suffered from the lack of suitable training and "stick time" due to the shortage of aviation fuel.

- In the Battle of Leyte Gulf in October 1944, when US Admiral Bull Halsey left American forces exposed to attack by Japanese ships, that enemy fleet simply did not have enough fuel to take advantage of the opportunity.

In April 1945, Admiral Toyoda sent the half-fueled battleship *Yamato* and an eight-ship escort out of the protected home waters and straight into the American fleet supporting the invasion of Okinawa. US aviators sunk the *Yamato* and five of her escorts before they could do any meaningful damage. Subsequent bombing attacks on Japan's mostly inactive oil refining industry were followed by the incendiary and nuclear attacks that ultimately caused Emperor Hirohito to agree to the surrender of all Japanese military forces in August.

Germany Tackles Similar Problems

During the 1930s, Germany was confronting its own challenges in obtaining the large supply of oil that would be needed as Adolf Hitler's Third Reich attempted to control continental Europe and beyond. The parallels with Japan were striking: Germany had begun replacing coal with



Sovfoto/Universal Images Group via Getty Images

A Nazi oil base is destroyed by a Soviet air raid during World War II.

oil as the main fuel for its navy, it had very little oil within its own boundaries, its government supported and financed an extensive program to synthesize liquid fuel from coal and its leaders coveted extensive oil fields in nearby territories.

Hitler realized that building a war machine capable of making Nazi Germany the dominant force in Europe would require the acquisition of large and reliable sources of oil to fuel the tanks, trucks, ships and planes of the *Wehrmacht*. As chancellor in 1933, he extended important financial and political support to chemical company I.G. Farben's nascent efforts at producing synthetic oil from coal. During the next few years, the Nazi regime acquired total control of what was becoming a very successful synthetic fuel industry. Germany secured additional supplies of oil when it annexed Austria in March 1938 and when Hitler signed the Molotov-Ribbentrop Pact with the Soviet Union in August 1939. When Germany initiated a new war in Europe the following month, it gained yet another source of oil—the

Galician fields in southeastern Poland.

During the next nine months, German forces faced little opposition as they overran Norway, the Low Countries and France. In advancing westward, they were able to capture the oil fields in Alsace and the stockpiles of oil that lay in France and the Netherlands. Germany secured yet another source of oil in November 1940 when the Kingdom of Romania joined the Axis and contributed the output of its Ploesti oil fields to the members of that alliance.

In December, Hitler began planning to move his powerful army eastward towards the vast *lebensraum* (living space) he saw in the Soviet Union. Doing so seemed like a sensible idea. Several months earlier, Soviet troops had moved into sections of Romania. Hitler considered them significant threats to the Ploesti oil fields. Invading the Soviet Union would not only preclude that threat, but would also gain Germany access to both the farmlands of the Ukraine and the oil fields of the Caucasus.

In June 1941, German military forces began what they expected to be the

blitzkrieg invasion of the Soviet Union. They won many battles, but they did not fulfill Hitler's expectation of destroying their Soviet adversaries within three weeks. By the end of October, the forward-most invading units were still 200 miles from Moscow and 400 miles from the oil fields of the Caucasus. With winter closing in, the fuel-starved Germans made one final push to conquer the Soviet capital. A sharp counteroffensive pushed them back 150 miles before the Germans were forced to halt their offensive operations in the Soviet Union in January 1942.

It did not take long for Hitler to plan another invasion into Soviet territory. In June 1942, the *Wehrmacht* launched *Operation Blau*. Its main objective was the seizure of the oil fields at Maikop, Grozny and Baku in the heart of the Caucasus. The task force headed for that territory was accompanied by a 15,000-man Technical Oil Brigade, whose job would be to rehabilitate (if necessary) and operate (certainly) the captured oil fields. The army reached Maikop in early August,

but stiff Soviet resistance and the onset of another winter (as well as a shortage of fuel that hampered the operation aimed at capturing oil) made it impossible for the Germans to break through the mountain passes to the other oil fields in the region.

Germany's fuel situation actually improved during the period of relatively light combat that existed throughout most of 1943. The Allied bombing campaigns against the heavily defended refineries at Ploesti were not very successful. Italy's mid-year decision to cease fighting on the side of the Axis meant it would no longer be using German supplies. The synthetic oil industry contributed to steady increases in the country's stocks of gasoline and diesel fuel. And German civilians were consuming fewer gallons/tons of oil-based products and converting to fuel derived from wood and peat. By early 1944, thanks to all these factors, annualized oil production was down from the record levels of 1941, but it was still adequate for most purposes at eight million metric tons.

During the six months after the invasion at Normandy in June 1944, American bombers damaged most of Germany's crude oil and synthetic oil production facilities. They also destroyed much of the railroad network necessary for transporting whatever oil was produced to *Wehrmacht* troops on the front lines. British bombers interrupted that transportation system even further by dropping mines into the Danube River and obstructing the shipment of oil products throughout the Reich. Germany came up with what officials believed was a sufficient supply of fuel to support the December 1944 offensive known as the Battle of the Bulge.

After only six weeks, however, many of the army's tanks and trucks simply ran out of fuel while trying to capture two Belgian objectives—the depot at Stavelot and the port of Antwerp. By March 1945, Germany's total oil production fell to only 51,000 metric tons, the lowest level in more than a decade, and one not able to sustain even the weakened defenses the *Wehrmacht* mounted up until the formal surrender date of May 7.

The United States Faces a Different Challenge

In May 1941, President Franklin D. Roosevelt created the Petroleum Administration for War (PAW) to help ensure the

continuous flow of oil and related products to both military and civilian users. At that time, the United States accounted for 63% of the world's crude oil production; it had 39% of the world's proven reserves. Yet, the surge in demand from the expanding military establishment presented PAW Administrator Harold I. Ickes with a continuous set of challenges. Throughout the war years, the country never lacked for crude oil or the vast majority of its distillates. But it did encounter some difficulties in ensuring that American and Allied oil consumers scattered around the world received adequate supplies of the required products on a timely basis.

The United States faced its first serious oil distribution crisis just months after the attack on Pearl Harbor. In February 1942, German Admiral Karl Donitz sent his fleet of U-boats after the oil tankers moving along the Atlantic seaboard as they transported crude oil from Texas to the Northeast. That oil was designated for both domestic use and transshipment to Great Britain and Russia. U-boats seriously disrupted those delivery schedules. Prowling the coastal waters from Newfoundland to the Caribbean, they sank 50 oil tankers in only four months.

The monthly delivery totals to the East Coast fell from more than 1.2 million barrels of petroleum per day in January to only 100,000 barrels per day in October. PAW officials were able to call on the heretofore unimportant fleet of railroad tank cars to pick up much of the slack. In January, railroads transported only 98,000 barrels of oil per day to important East Coast destinations; they increased their volume to almost 800,000 barrels per day by October. This example of substituting one transportation method for another characterized most of the PAW's work throughout the war.

Administrator Ickes had anticipated the threat to the fleet of ocean tankers. As Secretary of the Interior in March 1940, he had been rebuffed in an attempt to build a pipeline from the Gulf Coast to the refineries in New Jersey. In September 1941, he received congressional approval to design and build more than three dozen pipelines to transport crude oil and refined products across the country. The most ambitious projects involved the construction of the 1,250-mile "Big Inch" pipeline to bring crude oil from Texas to New Jersey and the 1,475-mile "Little Inch" pipeline

to carry refined products over a similar route. After only 13 months of construction and testing, they began delivering products to their target locations.

By the end of 1944, they were safely and efficiently carrying 44% of the country's oil to its most heavily consuming Northeast locations. Meanwhile, PAW officials were coordinating the activities of railroad tankers, inland barges and tankers, other pipelines and even ocean tankers to meet the shifting demands of military and civilian users on the East and West Coasts and in geographic areas that experienced a surge in population and activity due to the establishment of military facilities. The military's organic fuel distribution organizations faced their own challenges involving weather, troop movements and the exigencies of combat on the world's many battlefields. But most of their problems involved temporary delays in making deliveries rather than a critical long-term shortage of the required products.

In November 1945, the Army-Navy Petroleum Board of the Joint Chiefs of Staff praised the PAW by noting that "... at no time did the Services lack for oil in the proper quantities, in the proper kinds and at the proper places..." and "...not a single operation was delayed or impeded because of a lack of petroleum products." If military officials in Japan or Germany had been able to make those statements, it's easy to believe that the outcome of the global conflict we call World War II would have been quite different. \$

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Centennial of Southwestern Oil & Gas Recalls Epic Bank Failures

Roughnecks of the Permian Basin have ridden many boom and bust cycles. Some regional banks, that should have known better, have succumbed.

By Gregory DL Morris

IT IS FLAT in the Permian Basin region of west Texas and southeast New Mexico. So flat that the locals say, “You’ve got to be nice to your dog because if he runs off, you can watch him go for days.”

One hundred years since the first commercial oil well was drilled in the region, the Permian has had another renaissance thanks to unconventional development technology. That includes three-dimensional seismic surveys, directional drilling, and hydraulic fracture and well stimulation.

The bonanza has put the Permian at the top of the league table for North American hydrocarbon producing regions, and also put the United States near the top of oil and gas producers worldwide. That statistic alone is stunning to anyone who remembers the “Arab oil embargoes” of the 1970s: long, angry gas lines and seemingly futile foreign and economic policy.

While the industry and the economy have recovered through multiple economic and commodity cycles, many individual drillers and bankers did not. Money is just as much a commodity as are oil and gas. Both were highly volatile in the '70s and '80s, and that showed: Of the total failure-resolution costs borne by the Federal Deposit Insurance Corporation (FDIC) from 1986 to 1994, half (a hefty \$15.3 billion) was accounted for by one region: the Southwest.

Big Trouble in Little Texas: Oil was struck in central Texas near the tiny town of Desdemona, east of Abilene, in 1918, two years before the first commercial well in the Permian basin. The good times lasted just a few years. Heavy rains and flooding hampered production and public health. But it was frontier lawlessness that suffocated Desdemona, culminating in 1920 with the burning of the Baptist church. The Texas Rangers swept the area, arresting more than 100 people. But oil production slumped and most people headed west. Fire ravaged the nearly empty town.

Credit: University of North Texas Libraries, The Portal to Texas History, crediting Permian Basin Petroleum Museum, Library and Hall of Fame.

DESDEMONA, TEXAS.

Not to put too fine a point on it, but that included losses of nearly \$6.3 billion in 1988 and \$5.1 billion in 1989, respectively 91% and 82% of the total FDIC failure-resolution costs for those two years. For the three years 1987 through 1989, 71% of the banks that failed in the United States were southwestern: 491 out of 689.

That flood of failure was not just broad, it was deep. It included some noteworthy and notorious busts. The rogues' gallery comprised First City Bancorporation, First Republic Bank Corporation and MCorp holding companies, among others.

In its official history and analysis of the period, the FDIC wrote, "The pervasiveness of the problems facing the region's depository institutions is indicated by the fact that the biggest savings and loan debacle also occurred in the Southwest, with Texas alone accounting for 18% of the Resolution Trust Corporation's resolutions and 29.2% of its resolution costs."

While the carnage was worst within Texas, the knock-on effects spread across the country. It may be said, unkindly if not untruthfully, that the Texas and southwestern banking crises of the mid-1980s were boomerang justice. The regional oil companies tried to play global trends to their advantage, aide—even exhorted—by the regional banks. The generous way to think of it would be that they believed their own hype. The harsher expression would be that they played with fire and got burned.

As with any global commodity market, crude oil prices are subject to myriad influences both statistical and sentimental. The ground was set for the southwestern banking crises of the '80s by the oil embargos of the early '70s.

In retaliation for the support from the United States and a few other nations for Israel in the Yom Kippur War, October 1973, several major Arab oil-exporting countries halted oil exports. While the cessation itself only lasted five months, until March 1974, its long-term effects fundamentally changed the structure of the US economy and the global oil industry.

The immediate effect was a rapid return to domestic development that had waned after World War II. In fits and starts, booms and busts, that domestic development continues to this day.

Crude prices peaked in 1981, but no one could call the top, at least at the time. The trouble for banks, however, was not the

slow fade that crude followed over the next few years. Rather, it was the too-close relationship the banks had with their borrowers, who in turn, had too much dependence on one global commodity. As crude prices went down, banks doubled down.

At first that seemed both wise and prudent. One shrewd Wall Street adage is sell into strength and buy into weakness. That works well through normal fluctuations, but not in structural declines.

"As oil prices continued to weaken, southwestern banks sought new investment opportunities and therefore increased their lending to the then-booming real estate markets, particularly commercial real estate," according to the FDIC history. "In hindsight this strategy proved to be unwise, for the health of the real estate markets was tied to the hitherto-strong energy markets."

As often is the case, there were early warning signs. Records show that from 1981 through 1983 office vacancy rates across the region were rising even while commercial real estate construction expenditures remained high. Then in 1986 crude prices tipped over from a slow fade to a steep drop. That pulled the rug out from under the entire economy of the region. A classic oil bust.

In the FDIC's assessment, "compounding the difficulties caused by the weakening energy markets was the excessive emphasis that some banks had placed on making energy loans to maintain market

share in an environment in which the competition to keep oil and gas customers, during 1981 and 1982, was intense."

The FDIC cited one specific case in which officials of Republic Bank of Texas were under pressure from members of the board of directors to preserve the bank's market share in energy lending.

"It was reported that Chairman James D. Berry summoned the bank's top energy lenders to his office and told them he wanted to make more energy loans. The lenders, who knew the industry was gripped by a gold-rush psychology, 'all sat there and blinked at the chairman, like a bunch of owls in a tree.' But lenders at other institutions were assuming the price of oil would climb to \$60 a barrel or more and had lowered their lending standards to grab new business. Republic's customers were going to those other banks."

There are many such examples ranging from ingenuous optimism, to cynical calculus, to oblivious bumbling. There were also a few Cassandras.

In late 1985, Sandra Flannigan, a vice president at Paine, Webber, Jackson & Curtis Inc. in Houston, believed that, "If we see oil prices go below [\$20 a barrel] and remain there for an extended period, we'll have substantial problems." Flannigan also anticipated that a serious decline in crude prices would have a knock-on effect across the entire state economy, especially real estate.



Founded as Hogtown in 1875, Desdemona boomed from 300 denizens in 1904 to about 16,000 in 1919, the peak of its oil production. Corruption killed the industry; flood and fire destroyed most of the settlement.

By the reckoning of the FDIC, at the beginning of 1987 one in six homes and apartments in Houston stood vacant. By early 1987 the tax rolls of Harris County had declined by about \$8 billion. Property values fell by as much as half in some areas. In a penumbra of what was seen across the country in 2007-10, foreclosure rates in some sections were more than 50%. Many people just abandoned their homes.

To put the situation into perspective, total foreclosures in Houston for 1984 were greater than 70,000, which is roughly the total number of houses that were built during 1986 in the cities of Detroit, Chicago and Seattle combined, according to federal statistics.

In such a climate, widespread bank failures were inevitable. Making matters worse, Texas mostly banned branch banking until the late '80s. Interstate or even national reach is no panacea, as was seen in later financial crises, but certainly the limited scope of Texas banking also limited capital and diversification of depositor and lender bases.

Of the two poster-child bank failures in the period, the more widely known is the collapse of the Penn Square Bank of Oklahoma City; the more devastating to the region was the demise of the First National Bank of Midland, Texas.

Penn Square went early: it was shuttered the day after Independence Day 1982, after running through \$436 million in capital. At the time of its closure it was the seventh-largest bank in Oklahoma. According to regulators, "the effect of its failure on other major banks was devastating."

That is surprising, given that despite its name evoking Eastern Establishment, Penn Square was "a one-office bank in a shopping mall on Oklahoma City's north side," in FDIC's own words.

That strip-mall lender far outstripped its rivals in aggressive energy lending. Records indicate about 80% of its loans had been made to energy-related businesses, as compared with just 20% by the bigger local and regional banks. In the five years ending March 1982, Penn Square's assets grew from \$30 million to a \$436 million.

At the time Penn Square was held to be a vanguard of hometown industry. In truth, "Penn Square appears to have had extremely lenient loan standards," the FDIC concluded dryly. The regulator noted that "whereas the common banking practice was to accept about half of a



Aerial view of downtown Midland, Texas, January 1977, during the boom when George Bush established himself in the Permian Basin petroleum industry. First National Bank is 24 stories tall.



This herd of cattle shown in downtown Midland, Texas was driven from South Texas to Lubbock in commemoration of the bicentennial celebration of the opening of the Ranch Headquarters at Lubbock, July 1976.

company's claimed proven reserves of oil and gas and then base loans on 30% of that figure, Penn Square regularly accepted 75% of the gross value as collateral."

Worse, the bank bought deposits and syndicated its lending among regional and money-center banks. As happened with collateralized mortgage obligations, that spread the default risk without the counterparties being fully aware of their exposure. Of course, Penn Square earned

fees for loan service as well.

Chase Manhattan Bank bought \$212 million of Penn Square loans, a number that is coincidentally Manhattan's area code. Later Chase sued Penn Square for fraud claiming the loans it bought "were backed with bogus collateral, ranging from oil rigs to thoroughbred race horses."

Chase survived its brush with Penn Square. Continental Illinois of Chicago did not. The latter bought a billion dollars



First National Bank, 1909. This building was constructed after a fire destroyed the first building.

of loans from Penn Square. When those went sour, Continental Illinois was hit by a tsunami of withdrawals.

“When Continental Illinois National Bank and Trust Company failed in 1984, it was the largest bank failure in US history, and it remained so until the global financial crisis of 2007–08,” according to the official history of the Federal Reserve. “The Chicago-based bank was the seventh largest bank in the United States and the largest in the Midwest, with approximately \$40 billion in assets. Its failure raised important questions about whether large banks should receive differential treatment in the event of failure.”

The First National Bank of Midland (FNBM) was the largest independent bank in the state at the time of its failure in October 1983. It had been a \$1.4 billion institution, and it became the second-largest commercial bank, at the time, to fail in FDIC history.

FNBM was effectively Penn Square, squared: all the aggressive lending in oil and gas, magnified by its central place in the regional economy of the Permian Basin. In early 1980, FNBM leadership decided to bet heavily on the hometown business. The bank “concentrated its loans

on drilling and exploration ventures and financed its loan expansion partly by soliciting large deposits from Wall Street investors,” according to the FDIC post mortem.

“By year-end 1981, the bank had doubled its assets,” regulators noted. “Euphoric about the energy boom, the bank departed from prudent banking practices in evaluating loans; for example, it allowed customers to determine the value of their own collateral. The bank was known for the ‘handshake’ loans it made on long-shot oil and gas ventures.”

Falling oil prices and the recession of 1982 hit FNBM hard. “In 1983 the percentage of the bank’s non-paying loans was approximately 25% of assets,” said the FDIC report, “the highest percentage of any large bank in the United States at the time. In early October 1983, First National reported that ‘nonperforming energy loans were the primary contributors to its \$120.8 million in losses over the first three quarters of 1983.’ Widespread publicity about the bank’s losses eroded public confidence and led to a run on deposits.”

A year after the FDIC took over FNBM, *The New York Times* ran a long-form feature by Robert Reinhold on the failure and its effect on the region. It noted in a

matter-of-fact way that “as a result of its takeover of the bank, the agency owns, among other things, 67 oil wells, two Rolls-Royces, rights to books and movies, numerous office buildings and condominiums and a huge chunk of real estate in Midland. This includes a downtown tract where the bank once planned to erect two 40-story office towers. This ‘superblock’ is now a parking lot.

“Agency officials say that if they wanted to play strictly by the rules,” the *Times* reported, “they could foreclose immediately on 365 homes, 12 commercial buildings, a million acres of land and 139 drilling rigs, shutting 451 businesses and putting 6,500 people out of work in Midland and nearby Odessa.”

The FDIC official charged with sorting the FNBM mess was Thomas R. Procopio, who had already handled the failure of Franklin National in 1974 and Penn Square two years earlier. Among the liquidations, he shut the Schaler Rolls-Royce dealership, saying “We didn’t need the world’s largest Rolls dealer in Midland,” the *Times* quoted.

Procopio described the bank as “horrendously” sloppy in record keeping. “Everything was done on a handshake,” the *Times* quoted. “It was like a \$50 million good-old-boy bank.”

The view from outside was no more kind. “It was unbelievable the way they were dishing out money,” the *Times* quoted William M. Kerr, a leading Midland lawyer who represents many debtors. “You could borrow money without collateral for deals that had no chance of paying back.”

That was not always a bad thing. FNBM lent to local cultural and social institutions, including the YMCA and brought classical music performances to the dusty plains.

The final irony, an epitaph, for First National Bank of Midland was written on a plaque commemorating its founding in 1890. “Its financial stability has saved its customers from ruin in the face of drought or other disasters over the years.” 💰

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WHERE ARE THEY NOW?

E.F. Hutton & Co.

Founded in New York in 1904

By Susie J. Pak



Bettmann

THE GRANDSON of an Ohio farmer, Edward Francis Hutton was born in Manhattan in 1876. His father, James Laws Hutton, was a New York stockbroker who died when Hutton was about 10 years old. When he was 15, Hutton started working as an office boy in a mortgage firm. In 1898, he became a partner in Parmalee & Hutton, a member of the Consolidated Stock Exchange. In 1900, Hutton created Harris, Hutton & Co. with partner James and Thomas Harris, who had been owners of a biscuit company that they sold to National Biscuit.

Parmalee & Hutton (1898)
Harris, Hutton & Co. (f. 1900, New York)
E.F. Hutton & Co. (f. 1904, New York)

In 1901, Harris, Hutton & Co. was dissolved, and Hutton opened a New York branch office of W.E. Hutton & Co., a Cincinnati firm whose senior partner was his uncle, William E. Hutton. In 1904, Edward Hutton went into business for himself and founded the firm of E.F.

Hutton & Co. with his brothers, Franklyn L. Hutton and William D. Hutton, and his friend, George A.E. Ellis, Jr. Founded in New York but based in San Francisco, it became “the first Stock Exchange firm to run a single wire across the continent to California.”

As his firm and reputation grew, Hutton experienced personal tragedy with the death of his first wife, the former Blanche Horton, who died from pneumonia in 1917. In 1920, their son, Halcourt Hutton, died in a horseback riding accident at the age of 18. In 1920, he married Marjorie Post Close, the daughter of Charles W. Post, an Illinois native and the son of a farm-implement dealer, who became an entrepreneur and founded the Postum Cereal Co. of Michigan. Hutton became chairman of Postum and led the merger of 15 companies into what became General Foods Corporation. He remained the senior partner of his firm until 1921, when he became a limited partner. He died in 1962, the year the firm became a corporation.

E.F. Hutton & Co., Inc. (1962)
E.F. Hutton Group (1974)

In 1974, the firm was renamed E.F. Hutton Group in which E.F. Hutton & Co. became a subsidiary. By that time, the head of the firm was Robert M. Fomon.

Born in Chicago in 1925, Fomon was raised in Wisconsin. Both of his parents were doctors. When he was four years old, his mother died of cancer, and he was raised by his maternal aunt. After graduating from the University of Southern California in 1947, Fomon joined E.F. Hutton’s Los Angeles office in 1951. He became the mentee of a partner, Alec F. Jack, a Scotsman who became the head of the firm’s southern California region in 1967. Fomon worked his way through the ranks of the firm, becoming head of the corporate finance unit on the West Coast. In 1970, he became CEO when Jack became chairman of the board. Fomon took over the firm at a difficult time, but the firm survived as other firms went out of business. Fomon said, “We were bailed out by the good market in 1972.”

According to *The New York Times*, “Under Mr. Fomon’s leadership in the 1970s and 1980s, E.F. Hutton went public and grew rapidly into a securities firm with a household name. For most of those years, the firm attracted customers with one of the first and most memorable television advertising campaigns for a brokerage firm, using the slogan ‘When E.F. Hutton talks, people listen.’”

After the firm went public in 1972, it “had \$405 million in assets, 3,700 employees, 1,400 brokers, 82 offices spread out over 21 states and 300,000 customers.” In

“When E.F. Hutton talks, people listen,” was the company’s slogan, so when Shearson Lehman announced it would buy E.F. Hutton for nearly \$1 billion, Shearson Lehman CEO Peter A. Cohen cupped his ear to listen to E.F. Hutton CEO Robert P. Rittereiser.



Workers chalk up stock quotations as clients use ticker tape machines and telephones at an E.F. Hutton & Co. stockbroker's office, circa 1925.

1974, the firm expanded further by buying 14 offices in New England and the Southeast from the defunct brokerage house duPont Walston. That year, the firm created a holding company called E.F. Hutton Group Inc. in which E.F. Hutton & Co., Inc., the brokerage house, was a subsidiary.

Shearson/Lehman Hutton (f. 1988)

In 1985, E.F. Hutton & Co. suffered a blow to its reputation when it “pleaded guilty to criminal charges that it defrauded its banks out of millions of dollars in a check-kiting scheme.” The firm admitted that it wrote “checks for more than it had on deposit at banks from July 1980 to early 1982. The government charged the scheme gave the brokerage house interest (sic)-free use of up to \$250 million a day.”

The firm agreed to pay a \$2 million fine. Fomon believed that pleading guilty would make the scandal go away. He said,

“I never dreamed that there would be an indictment. I thought at most that there would be some kind of injunctive action. And then I thought that the guilty plea would end it.”

Instead, the scandal grew bigger and the report written by former Attorney General Griffin B. Bell, whom Fomon hired to investigate the scheme, found that Hutton was “a highly aggressive firm where executives could encourage what turned out to be fraudulent activities to earn extra interest income for the firm—without taking responsibility for the activities.”

Rumors circulated in late November 1985 that the firm would be acquired. That year, Fomon cancelled the firm’s popular ad campaign. The fallout of the fraud continued even after he stepped down as chairman. Fomon was replaced as chairman by Robert P. Ritterer, who had been a member of Merrill Lynch for 27 years. The firm was censured by

the Securities and Exchange Commission (SEC), and rumors spread that the Justice Department was going to investigate the firm for money laundering.

Fomon retired in 1987. According to the Associated Press, “His retirement with Hutton marked the departure of the last major executive associated with Hutton’s troubles over the past two years, particularly the scandal in which the firm pleaded guilty to 2,000 counts of federal mail and wire fraud.”

In November 1987, *The New York Times* reported that E.F. Hutton lost “a two-year struggle to remain independent” and had “put itself up for sale.” That year, E.F. Hutton & Co. announced it was being acquired by Shearson Lehman Brothers, a subsidiary of the American Express Company, in a \$1 billion deal. Shearson was interested in Hutton’s retail business and asset management. At that time, Hutton had 6,500 representatives, 350 outlets and



Dale Frey, manager for E.F. Hutton & Co. in Denver, shows off the company's new electronic equipment, circa 1968.

Denver Post via Getty Images

\$28 billion in assets under management, but only Shearson was willing to take on the Hutton firm, its liabilities and regulatory problems.

Shearson had approached Hutton about a merger in 1986, which was rejected. After the 1987 Stock Market Crash, Hutton changed its mind. In 1988, the firm became Shearson/Lehman Hutton Inc. In 1990, however, the Hutton name was dropped and the firm became Shearson Lehman Brothers Inc. With that change, the E.F. Hutton name was lost to history. 💰

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About Where Are They Now? The "Where Are They Now?" Series traces the origins and histories of 207 of the underwriters of the 1956 Ford Motor Company IPO. The research for this series has been generously funded by Charles Royce of The Royce Funds. The Museum's "Where Are They Now?" blog can be found at: wherearethey-nowblog.blogspot.com.

most notably including Gould's Pumps, the world's leading industrial pump manufacturer. This was also a great investment. In fact, members of the Murray family could be seen wearing Gould's Pumps caps when boating on Lake Wentworth. ITT purchased Gould's Pumps in 1997.

After his retirement, the value investing academic program at Columbia was unfortunately suspended. In 1984, Buffett gave his famous lecture on "The Super Investors of Graham and Doddsville" at a Columbia Business School seminar. It was an attempt to renew interest in value investing by directly challenging the efficient market hypothesis, which had become conventional wisdom at the time. In 1988, Murray co-authored the fifth edition of Graham and Dodd's *Security Analysis* with Sidney Cottle and Frank E. Block.

The Bridge to the Modern Era of Value Investing

In 1993, Mario Gabelli and GAMCO Investors sponsored the Roger F. Murray Lecture Series. As described in *Columbia Business School—A Century of Ideas*, "Gabelli wanted to archive Murray's insights, in part to create a living legend. The lectures were delivered at the Museum of Television and Radio over a four-week period in January and February of that year. On an unseasonably warm but rainy day, the first lecture was standing room only. Although Murray was 81 at the time, he delivered each 90-minute lecture without using a single note."

In the first lecture, Murray defined private market value, a concept championed by Mario Gabelli. "If I say to myself, how would I define private market value, I would say it is likely to be intrinsic value plus, potentially, a control premium...and there may be patience factor... The greatest deficiency in the market's pricing of corporate America is its lack of patience. So maybe if we have it private, we have a better ability to exercise patience. But there is one negative...lack of access to the public markets."

One of the attendees at these lectures was Bruce Greenwald, the newly appointed Heilbrunn Professor of Asset Management and Finance. In his book, *Value Investing: From Graham to Buffett and Beyond*, Greenwald recounts his experience. "I attended those lectures out of curiosity. Like generations of investors who preceded me, I was struck by the compelling logic of Graham's approach. As a consequence, in 1993 I dragooned Roger Murray into joining me in offering a revived and revised version of the value course." Murray co-taught the value course with Greenwald before finally retiring. Greenwald carried the academic torch of value investing to a new generation of students from 1993 until his retirement in 2018. He became the personification of Benjamin Graham and Roger Murray in the modern era.

In 2013, Mario Gabelli and GAMCO Investors sponsored a 20th Anniversary Celebration of the Roger Murray Lectures. It was fittingly held at the Paley Center for Media, where the lectures originally took place. Tano Santos, Greenwald's co-director of the Heilbrunn Center at Columbia Business School, gave the keynote address.

The Gabelli Center for Global Security Analysis at Fordham University was launched as part of this event. Its mission is to support and promote security analysis in the tradition of Graham, Dodd, Murray and Greenwald.

Roger Murray passed away in 1998, but his influence is alive and well at Columbia Business School and Fordham University. The torch of value investing is still burning brightly. \$

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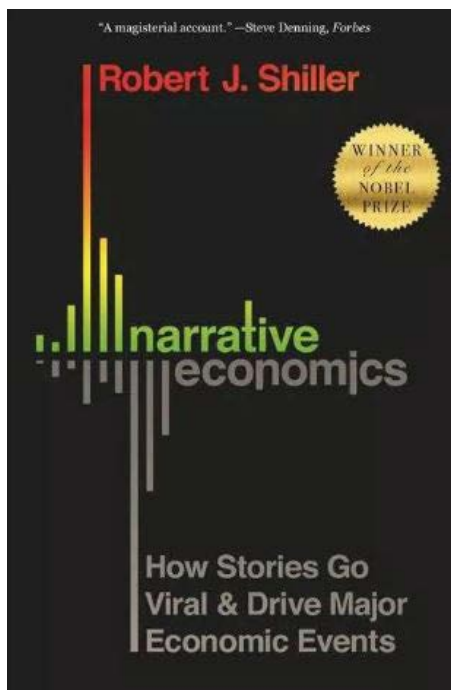
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Narrative Economics

By Robert J. Shiller

Princeton University Press, 2019

377pp with appendices, notes, references and index

WHAT DRIVES PEOPLE and societies in making economic and financial decisions? Classical economics says self-interest, everyone looking to maximize their own gain. Taken together, individual choices result in society using its resources most efficiently. Not so, says behavioral economics! Economic actors often make decisions which *are not* in their best interests. Psychology, neurological hardwiring and sensory factors play a powerful, sometimes overwhelming role in choosing one course or another.

In *Narrative Economics: How Stories Go Viral & Drive Major Economic Events*, Robert Shiller, Yale professor and Nobel Prize winner, offers new insight on this debate, one which he modestly describes as “a new theory of economic change.” It is not only self-interest, or the effects of ingrained behavioral tendencies, says Shiller, which pushes people one way or the other. Narratives, or more colloquially, stories, play a huge part in how economic

decisions are made. By understanding how economic narratives are formed and how they are transmitted, we can more precisely chart their effect and, presumably, make more informed policy decisions.

Like many economists, Shiller can’t get his mind around bitcoin, and this is where the book begins. This new class of assets, on which fortunes have been made and lost, can’t be explained rationally. Instead, says the professor, it has taken hold in the minds of its enthusiasts as a “new world” of money and finance. Deep in the mysterious electronic bitcoin mines and independent of central authority, bitcoin-bugs are motivated by a potent brew of contrariness, frontier mentality and technological snobbery. We don’t need no stinkin’ central banks or national currencies! (See *The Treasure of the Sierra Madre*). It is this “story”—this “narrative”—which has propelled the bitcoin phenomenon.

From here, Shiller moves into how events or impressions are aggregated into narratives. There is rarely one source for popular stories; instead, they form from many inputs, widely dispersed and sometimes unrelated. Shiller unearths the concept of “consilience” to explain how separate disciplines come together to form a “unity of knowledge.” As stories form, they are transmitted person-to-person similar to how biological contagions or epidemics occur. Hence the adoption of “viral” to describe the rapid dissemination of stories and trends. When these two concepts—creation and transmission—relate to economic matters, narratives take on tremendous power to change economic fortunes for good or bad. Big data can now show us how quickly and widely stories are adopted.

Trying to organize such broad concepts into a cogent economic theory is a tough nut. Stories, of course, are everywhere. Deciding how and why some narratives matter economically and some don’t is where the book leaves the classroom and enters the real world. Shiller outlines seven key propositions to help us try to apply his ideas. To highlight just four:

- Epidemics can be fast or slow, big or small;

- The economic impact of narratives may change through time;
- Truth is not enough to stop economic narratives;
- Economic narratives thrive on human interest, identity and patriotism.

Shiller spends the rest of the book looking at a range of economic events both recent and historical through the lens of his narrative propositions: Panic v. Confidence, Frugality v. Conspicuous Consumption, Machines over Labor, Gold Standard and Bi-metallism, Stock Market Bubbles, Automation and AI, and so on. Not surprisingly, he finds “the narrative” in each and traces how his propositions echo through them. Most often, he laments how narratives are hijacked by misinformation and emotion. These historical nutshells are well-paced, and easy to read. They reflect Shiller’s wide-ranging knowledge and experiences.

One has to tip-toe around finding fault in a work by someone as eminent as Robert Shiller. But here goes. The references to epidemics and contagion sound very enticing, particularly in the COVID world in which we now live. But stories aren’t viruses; they don’t infect people without their knowledge. It takes a conscious decision to adopt them and behave accordingly. And looking backwards, it is easy to see “narratives” wherever you look for them. But looking ahead, how do we recognize when an important narrative is being formed, and how can we measure its probable economic impact? That’s the trick. More work has to be done in this area, concludes the author.

These are interesting times for economists. While they are eagerly sought out to opine on just about everything, many of the most time-honored economic truths have failed to materialize. Will “narrative economics” emerge as a new economic theory? That story is still being written. 💰

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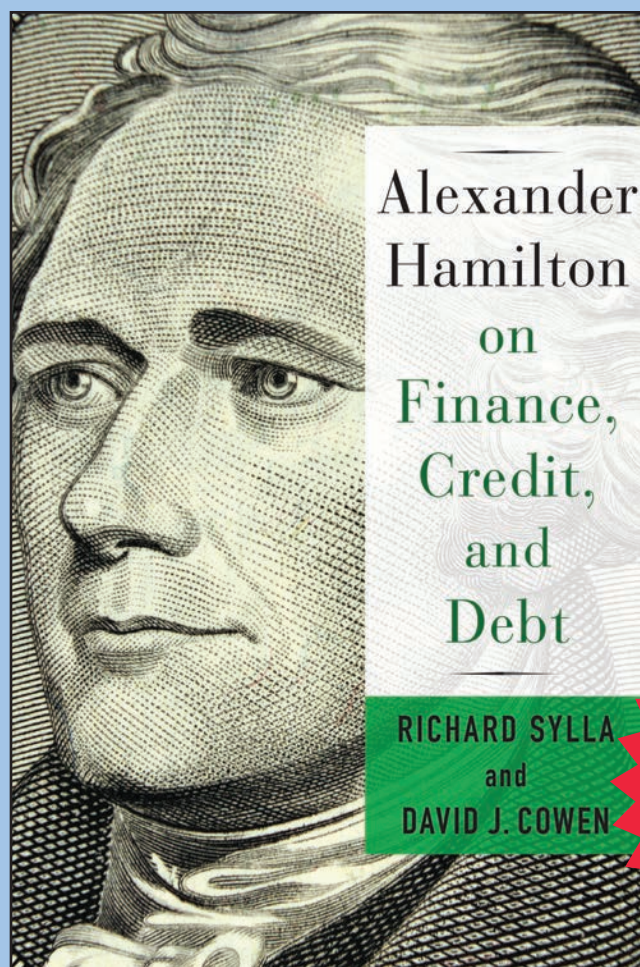
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